



SATURDAY, FEBRUARY 6, 1875.

## Rail Section and Fish Plate for Erie Railway.

We give an engraving this week of a rail section and fish plate designed for steel rails for the Erie Railway, by Mr. Octave Chanute, the Chief Engineer of that line. The fish plate is a modification of that used on the Lehigh Valley Railroad. It will be observed that the lower portion of the plates form brackets which rest on the flanges of the rail. The notching for the spikes is done in the plates instead of in the rail flanges, the latter being, it is said, a very prolific cause of breakage of steel rails. The weight of the rail is 60 pounds per yard. The other peculiarities of construction are so clearly shown by the engraving that no further description is needed.

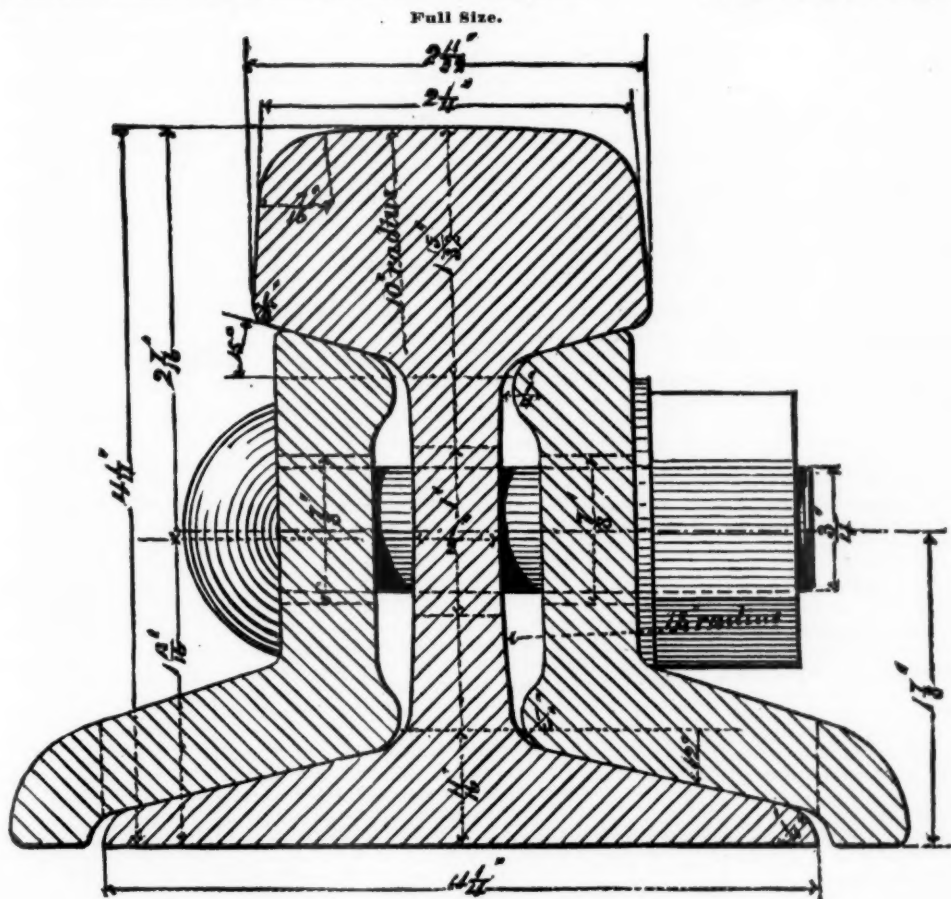
next to the mercurial, among philosophic instruments in determining elevations, but as built and sold it has its errors; they are as follows:

1. The error in graduating the dial from which the readings are taken.
2. The index hand which marks differences of atmospheric pressure is put on the spindle like the hour hand of a watch, and depends entirely on friction to keep its place. This hand is liable to be moved by a sudden jar or motion, which is unavoidable in passing through a rough country.
3. The weakening of the spring of the corrugated disc of the sealed cylinder, by time and by constant use at different elevations.
4. The difficulty of reading, in any ordinary instrument, minute movements of the index.
5. The error of friction that exists, or may be occasioned by the movement of parts in transmitting motion from the pressure disk to the index hand, preventing the hand from settling at the true mathematical point, when disturbed, without altering the position or elevation of the instrument.

sion on the dials of their instruments by repeated observations, at two or more stations, the difference in elevation of which has been carefully ascertained by standard levels.

The fourth difficulty can in a measure be remedied by having the index point as fine as the point of a needle, and the dial divided into hundredths of an inch, on a metal plate, by a graduating engine. I had two of Aneroid's own make rebuilt in this way by Elliott & Sons, of London, in 1853, and was well repaid for the cost and trouble in the accuracy of the work done by these instruments in South America.

The fifth difficulty I have mentioned, that of unequal friction in parts of different aneroids, is not worthy of attention in ordinary instruments, where the point of the index hand is coarse enough to cover two or three hundredths of an inch; but is worthy of attention in finely-made instruments, and can be overcome, to a great extent, by gently tapping the instrument with any small piece of metal. The same I consider important in the use of the mercurial barometer, as the mercury in barometers, with small passages in the glass, does not in all cases settle to the lowest point by its own gravity, and without the assistance of vibrations occasioned by jarring. This



Scale 3 in. = 1 foot.

## RAIL SECTION AND FISH PLATE DESIGNED FOR THE ERIE RAILWAY.

By Mr. Octave Chanute, Chief Engineer.

## Contributions.

## Experience with the Aneroid.

ENGINEER'S OFFICE, No. 63 Pine street,  
NEW YORK, January 30, 1875.

TO THE EDITOR OF THE RAILROAD GAZETTE:

I notice in your journal some articles on the use of the aneroid barometer in making preliminary surveys to establish main features. As I have some experience with barometers, their errors, and the accuracy of the work they are capable of, I send you a few remarks to read. If you think them worthy of laying before your readers, please print them; they may assist in putting some new beginners in the use of the barometer on their guard as to the errors of the "aneroid."

There can be no doubt of the superiority of the mercurial barometer in getting mountain elevations over all other instruments, when working in a country where the meteorological changes of the atmosphere are very slight. The accuracy of this instrument is to me very astonishing; as it is a very delicate instrument, requiring careful handling and subject to being broken on rough mountain slopes. Other instruments, their accuracy, errors and reliability, are worthy of attention and examination. The "aneroid" undoubtedly takes its place

The first two errors mentioned are errors of manufacture, and can be in a measure remedied by getting instruments made by first-class workmen, such as make fine transits. The third error is one that cannot be remedied; it is to be found in all springs, and is the result of "old Time" operating on all matter to reduce it to its primitive condition. We may build up, refine and improve, but time will destroy.

My attention was first called to the weakening of the spring in the disk of an aneroid by Captain Wellesley, now Admiral Wellesley, of the Royal Navy. He had a number of aneroids—I believe, twenty—on board his ship, the "Daedalus," when sent to carry provisions, in 1850, to Sir John Franklin's expedition. He went through Behring's Straits, and was in the Arctic Ocean for some months. On his return he told me that all the aneroids showed a weakening of the disc, and did not show the same changes, when compared with the mercurial barometers, that they showed when he left England. That the discs of the aneroids should become weaker in time is a matter we might expect, but that they should become perceptibly weaker in two or three years I was not prepared to hear. To provide for this weakening of the discs, I would propose that all engineers, and others using aneroids, should find out, at least once a year, the value in feet or metres of each divi-

I found to be the case more particularly in using the syphon barometer than with the cistern barometer.

I had two of Hendon's syphon barometers made by Elliot & Sons, in London, and used them for years in South America with the greatest satisfaction, in examining the topography of some rough country. It is well to state, however, that much of this work was done in a rainless region, where the hygrometric and atmospheric changes were very slight, the movement of the barometer in a whole year being only about the eighth of an inch at the sea level. In one case in Peru I had made the elevation of a city (Tacna) forty miles in the interior 1,510 feet above the level of the sea. Judging by the eye, it would appear not over 800 feet. Mentioning the elevation at dinner table in the evening, and complaining about my barometers having given me false results, a gentleman at table, Colonel Lloyd, English Minister on his way to Bolivia, said: "You are wrong; your barometers are right; I have made the 'Patio' of this house the same as you make it." All at table and in the town insisted that they were at no such elevation. I afterwards built a railway over this route, and proved that the barometers had given almost the exact true elevation. Shortly after this I had a chance to test these barometers on a railway I had built in the north of Chile, just

bordering on the great Desert of "Atacama." I knew that a point at "Pabellon," 76 miles back from the sea, was 2,195 feet above high water, and 2,195 feet the barometers made it. After this I had a chance to test the accuracy of these barometers in the south of Chile, where there are considerable atmospheric changes. Starting from the city of Santiago (the capital, about 100 miles back from the sea,) and following an interior valley to the south, through which I afterwards located and built a railway, I got elevations with barometers and measured distances with odometers on the wheels of a gig. Below I give the elevations, as made by barometers, and afterwards by careful leveling—the barometric elevations being taken at points on the public highway—the other elevations by level being taken on the survey line, which was close to the highway, for most of the points named, the barometric elevation of Santiago being assumed as correct, to start the level by:

Names.	Distance in miles.	Barometric Elevations in feet.	Elevations by leveling in feet.
Santiago (Plaza).....	0	1,795	1,795
Rio Maipo.....	17	1,600	1,695
Rancagua.....	52½	1,404	1,499
Rengo.....	71½	902	932
San Fernando.....	86½	976	974
Curico.....	119	561	581
Rio Lontue.....	124½	670	674
Vill. Molina.....	130½	707	683
Perates.....	177½	103	89

I did not keep the odometer distances, but I recollect that they were very accurate when compared with the chained distances made afterwards. With the notes I got in three days I was able to make a rough profile of the line, containing all the main features and the difficulties to contend with in a distance of 180 miles. This was of great use in the survey afterwards. I have mentioned these things for the benefit of young engineers, and to bring to their notice what can be done with the barometer in making a preliminary examination of a route on which it is proposed to build a public work.

Having heard of a recent improvement in the aneroid barometer, for differential purposes, through a German engineer now travelling in this country, I sent for one, and now have it before me. It is designed by F. H. Reitz, civil engineer, of Hamburg, and made by R. Deutschbein in Hamburg, and is said to give very good results. This aneroid has no dial; the movable disc gives motion to a lever, on the end of which is a vertical scale photographed on glass to a reduction of 1-300 of the original. The actual length of the scale is three millimetres, each millimetre being subdivided into 100 parts. As the lever bearing the scale has a proportion of 10 to 1 in its action on the scale by disc movement, each division of the scale represents one-thousandth of a millimetre. The scale is viewed through a powerful microscope (carrying cross-hairs) which so magnifies the divisions of the scale as to render it easy to estimate by the eye decimal parts of a division, and in this way read a movement of the disc to one ten-thousandth of a millimetre. This arrangement appears to be far in advance of anything preceding it connected with the aneroid. As the pamphlet accompanying the instrument is in German, I cannot give all the designer's description of it. I intend to place this instrument in the hands of some competent person to experiment with and report on its reliability and accuracy, feeling that every man should assist, as far as in him lies, to promote progress and economy in engineering works.

W. W. EVANS.

#### Experience with Car Wheels.

LAMBERTVILLE, N. J., January 18, 1875.

TO THE EDITOR OF THE RAILROAD GAZETTE:

The discussion in your issue of the 26th ult. on the mileage of car wheels induces me to give my experience on the subject.

About the year 1853, being then Superintendent of the Belvidere Delaware Railroad, I began to procure for that road cars made under my own direction, and continued to do so for several years. Believing it most economical in the long run to make the wheels of the best charcoal iron only, instead of mixed iron as was then a frequent if not the general practice, I adopted that plan, using the Long Swamp pig, from Berks County, Pennsylvania, unmixed. The wheels were made with great care and skill by Mr. William Cowin, of the Lambertville Iron Works. The weight was 460 lbs., the chill nearly five-eighths of an inch deep. The greater part were put under coal cars, running in the Lehigh Valley system, averaging about 7,000 miles run per annum. The weight on a wheel of a loaded car was about 5,000 lbs. The springs were of wood, very imperfect. The net cost of each wheel fitted on the axle was about \$20, varying with the price of the metal. The wheels were all marked with the name of the maker and the date, and put in service as soon as made.

During the years 1869 and 1870, careful records were kept of the dates of the wheels taken off at the company's shops, with the following results: The wheels made by Mr. Cowin had been running from 16 years down to one month (the latter, I believe, broken by an accident); many had been running 12 or 14 years, and the average of all was upwards of eight and a half years, the average distance run being estimated at upwards of 60,000 miles.

Other wheels taken off at the same time averaged two years and one and three-quarter months. These were made by parties of good reputation. Whatever these wheels professed to be, they were doubtless made of mixed metal.

Many of our own wheels have been recently taken off that have been running since 1854 and some since 1853; that is, they have run 20 years or more, and doubtless over 140,000 miles. No extensive register has been kept of dates of wheels taken out since 1870, but from the frequency with which those that have been running 15 or 20 years have been met with, I have little doubt the time would now average 10 years, and the mileage 70,000.

Many of these wheels, perfectly good in other respects, were

taken out in consequence of flat places, worn by sliding them on the steep grades in the coal regions. But for these steep grades the average duration would doubtless have been considerably greater.

I quite concur with what seems to have been the opinion at the car-builders' meeting, that ordinary wheels (as we used to get them: I have no very recent experience) scarcely averaged 30,000 miles; and, in the language of Mr. Washburn, that such a wheel must be a very good one to run 40,000 miles. I understand that some companies now make their contracts for wheels based on 20,000 miles. And yet the foregoing experience shows that wheels carefully made from the best pure charcoal iron will average 60,000 or 70,000 miles, and even sometimes reach 150,000.

Unfortunately, Long Swamp charcoal iron is no longer made. How the best brands now compare with it I do not know.

The following calculations show the great economy of good wheels, even at much higher prices than those made of inferior iron. I use the formula I adopted some years ago in a paper "On the Comparative Economy of Steel and Iron Rails."

Let  $a$  = rate of accumulated interest for the lifetime of a wheel;  $b$  = value of an old wheel, less the cost of taking off, charge for detention of car, etc.;  $E$  = economic value of a wheel for the service where used—not the good it could do or what it would earn if it had a chance, but the good got out of it, or what it actually earns, where used—less the charges against it, and the discount on the value of its future earnings to bring it to present value;  $V$  = value of a wheel that would last forever in the particular service in question; all rates, prices and mileages being supposed constant.

Then

$$V = E + \frac{E - b}{a}, \text{ and } E = \frac{aV + b}{a + 1}$$

One formula, or the other being used as  $V$  or  $E$  is known.

Suppose the rate of interest is 7 per cent. compounded semi-annually. Then the value of  $a$  for two years is 0.147; for four, 0.317; for six, 0.511; for eight, 0.734; for ten, 0.99; for twenty, 2.96. Take, as a standard of value and starting point for the calculations, the economic value of a wheel fitted on the axle that will last eight years in a service where the annual mileage is 7,500 at \$21 (about the actual cost at the prices of ordinary times of a pure charcoal iron 30-inch wheel weighing 480 lbs., fitted on the axle), and the net value of the same wheel worn out at \$7. Then, for that service,

$$V = E + \frac{E - b}{a} = 21 + \frac{21 - 7}{0.734} = \$40.07;$$

or, neglecting the small fraction, \$40. Then, as the economic value of everything that lasts forever is in proportion to the amount of work it does or what it earns each year, in a service where the annual mileage is 3,750,  $V = \$20$ ; when it is 15,000,  $V = \$80$ ; and when it is 30,000,  $V = \$160$ .

Suppose a mixed iron (30-inch) wheel that will run 30,000 miles costs \$17, and the net value when worn out is \$5; a pure charcoal iron wheel that will run 60,000 miles costs \$21, and when worn out is worth \$7; and a steel wheel that will run 240,000 miles costs \$40, and the net value of the old steel \$12; and suppose the cost of turning off the steel be set off against the risks and delays attending the iron; then their values in proportion to cost will be as follows:

In a service where the annual mileage is 3,750 the \$17 wheel will last eight years, and its present economic or true practical value for that service =  $E = \frac{aV + b}{a + 1} = \frac{0.734 \times 20 + 5}{1.734} = \$11.35 =$

67 per cent. of \$17, its cost; the \$21 wheel will last 16 years, and, as appears by making a similar calculation, its value for that service is \$15.68—75 per cent. of its cost; the \$40 wheel will last 64 years, and its value for that service is \$19.91—50 per cent. of its cost. Even here, where the good iron wheel has so little to do, it is more economical than the poorer one; and though the steel lasts so long the heavy interest on its cost makes it less economical than the good or even the poor iron.

In a service where the annual mileage is 7,500 the \$17 wheel will last four years, and its value for that service is \$13.42—79 per cent. of its cost; the \$21 wheel will run eight years and its true value is just cost; the \$40 wheel will last 32 years, and is worth for that service \$36.90—92 per cent. of its cost. Here again the best iron wheel is still the most economical.

In a service where the annual mileage is 15,000, the \$17 wheel will last two years, and is worth \$14.61—86 per cent. of its cost; the \$21 wheel will run four years and is worth \$24.57—117 per cent. of its cost; the \$40 steel wheel will last 16 years; if it will really run 240,000 miles, as supposed, and is then worth \$37.40—143 per cent. of its cost. If so, it is in this case more economical than either iron wheel.

But if the steel wheel will run only 150,000 miles, or five times as far as an ordinary iron wheel, it will last ten years, and is worth \$45.83—115 per cent. of its cost, and then it is not quite so economical as the pure charcoal iron wheel.

In a service where the annual mileage is 30,000, the \$17 wheel will run one year and is worth then \$15.27—90 per cent. of its cost; the \$21 wheel will run two years, and is worth \$26.67—127 per cent. of its cost; the steel wheel we have supposed to run eight years, and, if it does, is worth then \$76.38—191 per cent. of its cost.

But if this steel wheel will run only 150,000 miles, it will last five years and is then worth \$55.11—138 per cent. of its cost.

The conclusion is, that under all ordinary circumstances, the ordinary mixed metal wheel is less economical than a pure charcoal iron wheel; that where the annual mileage is under 15,000, the pure charcoal iron wheel is most economical; but where the annual mileage is 30,000 or anywhere near it, the steel, if the facts are as supposed, is most economical.

ASHBEL WELCH, Civil Engineer.

#### Car-Builders' Monthly Meeting.

The regular monthly meeting was held at the rooms of the Association, No. 113 Liberty street, on Thursday evening, January 21. The number in attendance was not quite equal to that of the two previous meetings, which was doubtless due to the very inclement weather.

The President, Mr. Leander Garcey, called the meeting to order, and announced that Prof. De Volson Wood, of the Stevens Institute of Technology, Hoboken, N. J., was present in accordance with the invitation extended to him at the last meeting, and would present his views in regard to the strains to which the frames of car-bodies are subjected.

Prof. Wood was then introduced and addressed the meeting in regard to the theory of strains as applied to the arrangement of timbers in the construction of bridges and cars, pointing out the difference in the two classes of structures and the various conditions peculiar to each. His remarks were illustrated by a wooden model of a bridge-span with bracing and supports, and also by numerous diagrams on the blackboard. It would be impossible to convey by mere description a clear idea of the points presented without the aid of drawings. The strains to which the frame of a car is subjected are more complex than those of a bridge; the end supports are different, and in order to determine the character of the strains, the nature of the load must be taken into account. A structure to be perfect must fulfil all required conditions. Defects were caused by overlooking some one or more of the elements involved in the problem. Instances were referred to and illustrated in which, from a lack of thorough practical and theoretical knowledge, timbers in the form of braces, supports, etc., were introduced in such a way as to contribute nothing to the strength of a structure, but rather to overburden and weaken it.

After Prof. Wood had concluded his remarks, which were listened to with the closest attention, a good deal of desultory conversation followed, and many inquiries were addressed to him upon the various points he had presented.

Mr. E. A. Olmstead spoke of the desirability of increasing the carrying capacity of freight-cars; they were now sufficiently large, and by strengthening a few weak points might be made to carry 15 tons of freight. There were, however, a great variety of patterns on our roads, causing great trouble in the handling of "foreign" cars, hardly any two pieces in them being alike. We wanted more uniformity in construction, something like an "International" pattern, which would work a great saving of material, time and labor, and insure better cars. He thought a car might be made of the same width as those now in use, and perhaps 30 feet long, that would carry 15 tons.

Mr. C. A. Smith favored longer cars. He believed in using 4-wheel trucks, but thought 15 tons was too much of a load for them. If the roads would put under freight-cars 4-wheel trucks with a spring motion, the same as under passenger-cars, more load could be carried, and with no more injury to the track. With 6-wheel trucks the load might be increased to 20 tons.

Mr. M. C. Andrews thought the best way to make a freight-car was to sheath it lengthwise instead of up and down, making the corner and door-posts enough larger to receive the ends of the sheathing. A bolt should also be run from one post to the other. This plan had been tried by some roads, and the cars stood up better, and a protection was also afforded against the beating in of rain. A broken sill could also be repaired or replaced without removing the whole of the sheathing. He would recommend 30 feet for the inside length of car.

Mr. M. P. Wood was decidedly in favor of increasing the capacity of freight cars. In the matter of earnings, the roads were every year getting less and less for a given amount of tonnage. An engine could make a cheaper haul with 15 tons in a car than with only 10 tons, besides requiring less side-track room. How we shall get this increased capacity in cars 30 or 34 feet long with the present width of 8 feet 6 inches, or even if it is increased to 9 or 9½ feet, was a debatable question. In hauling light and bulky freights that are now carried at first-class rates for the reason that bulk has the advantage of weight, we need larger cars. Shippers are not going to pay these rates any more. He thought a car 32 or 34 feet long and 9 feet wide would meet the requirement, do better service and give better satisfaction at the end of 5 or 10 years than a 26 or 28-foot car 8 feet 6 inches wide. There was no reason why 15 or 16 tons could not be carried safely on four-wheel trucks. The load on each wheel was less than that on wheels of passenger-car trucks or of locomotive tenders.

Mr. Andrews thought it would be a mistake to increase the width of cars, as it would cause trouble in running into freight houses and upon platforms where no provision had been made for such increased width.

Mr. Wood said that Western roads had already begun to make their cars 8 feet 8 inches wide, and as most platforms were adapted to the ordinary passenger cars, no inconvenience could arise from a width of 9 feet. It was simply a question whether it would be better to build 34-foot cars 8 feet 6 inches wide, or 30-foot cars 9 or 9½ feet wide. A great deal of room is now wasted in loading barrels of flour, boot and shoe boxes, etc., which would be saved if the cars were built so as to accommodate just so many tiers. Every inch of room should be utilized.

Mr. Smith had no objection to enlarging a freight-car, but was opposed to putting so heavy a load on eight wheels. When the standard axle was under discussion he had claimed that it would carry a greater load, and was met by the reply that they did not want to put a greater load on eight wheels. It is not that the wheels and axles are too weak, but the damage inflicted on the track is what should be avoided.

Mr. W. E. Chamberlain said it was unnecessary to have axles larger than 3½ x 5½ to carry from 12 to 15 tons. The grain cars from the West would average this capacity. If the small axles we have been using would do this, he could not see why the capacity of a freight car could not be doubled with the M. C. B. standard axle, or with 4x8. As regards the length and width of cars, he did not think there need be any trouble on that score.

Mr. Wood said that if an ordinary ten-ton car was increased to double its capacity, the increase in weight would not be equal to two such cars.

Mr. D. A. Hopkins said that the power wasted by the shaking of cars at a high speed was an element in the problem which should be considered. It was suggested in reply that this was due to bad boxes, frogs, defects in track, etc.

Mr. Smith had understood that cars were now being built 35 feet long, with six-wheel trucks, and designed to carry 20 tons of load; 200 barrels of flour could easily be packed in them. He asked if there were any objections to such proportions or to such capacity.

Mr. L. Garcey said there were many 34-foot freight cars in service, and had been for several years. He could see no difficulty in carrying 15 or even 18 tons of freight on 8 wheels. It was being done every day. Nor could he see why railroad officers should object to freight cars of this capacity running over their roads, while locomotives and sleeping and drawing-room cars weighing 30 tons were doing the same. The dead weight of these last-named cars was much greater than that of freight-cars. He thought it was perfectly safe, and would not injure the track to carry 15 tons on a truck.

Mr. Chamberlain suggested that the number of wooden bridges would cause difficulty. It would not do to concentrate too much weight on them, and this might be one objection to doubling the capacity of freight-cars.



Mr. W. E. Partridge alluded to the shaking of trains. Power was required to roll a train from side to side; this power must have a fulcrum, and this was the rails, ties, and ballast. If the cars were mounted on a little better trucks, there would be less rocking. He had seen a few freight-cars on passenger-trucks, and the only difference between them and the passenger equipment was the fact that they were black trucks. Peaches could be transported to market in these cars at passenger speed, and in good condition, which proved that the train did not shake as much as ordinary freight-cars. The trucks had springs that had some action, and when the box went up and down, the cars did not roll so as to take a man off his feet.

Mr. Chamberlain suggested that the general superintendents of roads be conferred with for the purpose of ascertaining whether an increase of capacity in freight cars would meet their approval.

The discussion was here closed, and the further consideration of the subject was deferred until the March meeting. It was also decided that car-builders be requested to furnish at such meeting models of different kinds of side-framing of freight cars, according to dimensions as follows:

First, 25 feet long; 6 feet high between sills and plates; 4 feet 6 inches between center of transom and outside of car.

Second, 35 feet long; height, 6 feet between sills and plates; 5 feet 6 inches between center of transom and end of car.

Third, 40 feet long; height, 6 feet between sills and plates; 6 feet between center of transom and end of car.

The models to be constructed of hard pine, to a scale of 1 1/4 inches to the foot; the doors to be represented as 5 feet wide in such models.

After a vote of thanks to Professor Wood for his interesting and instructive address, the meeting adjourned.—*National Car-Builders.*

### Transportation in Congress.

In the House on the 25th of January:

Mr. Harris, of Massachusetts, introduced a bill to refer to the Court of Claims and the Superior Court the determination of the right of the Central Branch Union Pacific Railroad under the existing law.

On motion of Mr. Hawley, of Illinois, the rules were suspended and the bill for a canal connecting the Illinois, Mississippi and Rock river (the Hennepin & Rock Island project) was taken for consideration for February 2 by a vote of 179 to 55.

Mr. Negley, of Pennsylvania, from the Committee on Commerce, reported the bill amending the act of March 3, 1873, authorizing the construction of a bridge across the Mississippi River at St. Louis. Mr. Wells, of Missouri, moved to lay the bill on the table. Negatived. The bill requires the bridge to be built of three straight, continuous spans, each not less than 400 feet in the clear.

Mr. Stanard, of Missouri, moved an amendment requiring it to be built of two continuous spans, not less than 450 feet in the clear. As there was only one hour assigned to the bill early in the session, and as nearly all the time was consumed in a call of the Yeas and Nays, on a motion to adjourn, and in reading the bill, &c., there was a great pressure by Mr. Negley to have it disposed of within the hour, while Messrs. Stanard and Wells, of Missouri, were claiming to be heard on the other side. Finally, Mr. Stanard was allowed five minutes, and proceeded within that time to point out the merits of his amendment. He did not oppose the bill or the construction of this bridge, which is to be at Carondelet, or South St. Louis, but he wished his amendment to be adopted in accordance with the demand of the merchants and Chamber of Commerce of St. Louis.

Mr. Negley explained and advocated the bill, which he said had been carefully and patiently considered by the Committee on Commerce. The object of the bridge, he said, was in the interest of commerce, and the opposition to it came from the friends and stockholders of the existing bridge at St. Louis, which charges \$5 a car on every car of coal crossing from Illinois into Missouri.

Mr. Stanard's amendment was agreed to, and the bill, as amended, was passed. Yeas, 217; nays, 4.

In the Senate on the 2d of February:

Mr. Allison, of Iowa, introduced a bill to authorize the construction of a pontoon bridge across the Mississippi at or near the city of Dubuque. Referred to the Committee on Commerce.

## General Railroad News.

### ELECTIONS AND APPOINTMENTS.

**Union Stock Yard & Transit.**—At the annual meeting in Chicago, January 20, the following directors were chosen: J. M. Douglass, M. Huggitt, J. C. McMullin, Hugh Riddle, W. B. Strong, J. M. Walker, Chicago; J. F. Joy, Detroit; Amasa Stone, Jr., Cleveland; J. N. McCullough, Pittsburgh. The board met January 28 and elected J. M. Walker, President; George T. Williams, Secretary and Treasurer; J. B. Sherman, Superintendent.

**Pennsylvania.**—Mr. Robert Stewart having resigned his position as Superintendent of Telegraph for the United Railroads of New Jersey Division, no successor will be designated, but a Superintendent of Telegraph for each sub-division will be appointed as follows: New York Division, Wm. Ettinger, office at Jersey City; Amboy Division, W. J. Carter, Camden; Belvidere Division, W. H. Willmott, Lambertville. These appointments will take effect February 15.

**Pittsburgh, Virginia & Charleston.**—The board has elected the following officers for the ensuing year: D. P. Corwin, Secretary and Treasurer; J. M. Byers, General Superintendent and Chief Engineer; Wm. J. Rose, General Freight and Passenger Agent; John F. Scott, Assistant Superintendent.

**South Mountain & Boston.**—Hon. H. G. Eastman, of Poughkeepsie, N. Y., has been chosen a director.

**Columbus & Xenia.**—At the annual meeting in Columbus, O., January 28, the following directors were chosen: J. R. Swan, R. Neil, H. C. Noble, P. W. Huntington, N. Hivling, R. A. Harrison, B. Gwynne, J. W. Andrews, C. P. Cassilly, H. J. Jewett, H. Hanna, G. M. Parsons.

**Payta & Piura.**—Mr. J. J. Ladd, late Master Mechanic of the Springfield & Illinois Southeastern, has been appointed Superintendent of Machinery, with office at Payta, Peru.

**Little Miami.**—At the annual meeting in Cincinnati last week the old board of directors was re-elected, as follows: A. D. Bullock, C. P. Cassilly, W. H. Clement, Edmund Dexter, Henry Hanna, L. B. Harrison, R. A. Holden, A. Hivling, H. J. Jewett, J. H. Rogers, H. E. Spencer, Joseph R. Swan. The board elected H. J. Jewett, President; Henry Hanna, Vice-President, C. P. Cassilly, Secretary; S. E. Wright, Treasurer.

**St. Louis, Lawrence & Western.**—Mr. E. C. Devereux, General Agent, will act as Superintendent of this road in place of J. M. Webster, resigned. Mr. John P. Usher, Jr., is appointed Cashier.

**Louisville, Cincinnati & Lexington.**—Mr. William Mahl, formerly on this road, and for some time past Auditor and Purchasing Agent of the Texas & Pacific, has retired from the latter company's service and returned to his old road as Auditor for the Receiver, with office in Louisville, Ky. Some of

his work published in the company's reports is of peculiar and unusual value.

**Missouri, Iowa & Nebraska.**—At the annual meeting in Centerville, Ia., recently, the following directors were chosen: Wm. Bradley, F. M. Drake, J. A. Talbot, Centerville, Ia.; James Fitz Henry, Henry Hill, G. S. Knox, J. E. Walker, Warsaw, Ill.; B. E. Smith, Columbus, O.; Andrew Carnegie, G. F. McCandless, George Opdyke, C. P. Palmer, Charles Secor, New York. The board re-elected F. M. Drake, President; Henry Hill, Vice-President and General Superintendent; Jas. Fitz Henry, Secretary and Treasurer.

**Delaware River & Bound Brook.**—Mr. Francis H. Taylor is Chief Engineer, and the engineers in charge of construction are: First Division, John McMinn, Pennington, N. J.; Second Division, George B. Boggs, Hopewell, N. J.; Third Division, E. C. Locke, Somerville, N. J.

**Cairo & Vincennes.**—At the annual meeting in Cairo, Ill., January 27, the following directors were chosen: W. P. Halliday, Roswell Miller, Cairo, Ill.; John Crerar, Chicago, Ill.; A. J. Drexel, Philadelphia; James J. Goodman, Solon Humphreys, M. K. Jessup, J. P. Morgan, J. M. Robinson, New York.

**Cleveland, Tuscarawas Valley & Wheeling.**—The executive officers of this road, formerly the Lake Shore & Tuscarawas Valley, are as follows: General Manager, E. B. Thomas; Superintendent and Chief Engineer, W. W. Card; Secretary and Treasurer, R. J. Chamberlain; Auditor, P. A. Howitt; Acting General Freight Agent, Wm. H. Grant; General Ticket Agent, W. D. Holden; Master Mechanic, W. F. Turritt; Road Master, James Reynolds. The general offices will be at Cleveland, O.

**Chicago, Rock Island & Pacific.**—Br. W. F. Peck, of Davenport, Ia., has been appointed Surgeon-in-Chief, with headquarters at Davenport. Assistant superintendents and heads of departments will report to him all cases of serious injury to passengers or employees, and call upon him in case of accident requiring his assistance.

**California Pacific.**—Mr. H. C. Lathrop has been appointed Managing Agent of the Steamer Department in place of Gen. Alfred Redington, resigned. His office is at Sacramento, Cal.

**Springfield & Northwestern.**—Mr. George N. Black, of Springfield, Ill., has been appointed Receiver in a suit brought by the bondholders.

**Atlantic & Great Western.**—Mr. James F. Clark has been chosen President in place of Mr. J. H. Devereux, resigned.

**Fitchburg.**—At the annual meeting in Boston, Jan. 26, the following directors were elected: Peter B. Brigham, Robert Codman, Boston; Wm. B. Stearns, Charlestown, Mass.; Seth Bemis, Newton, Mass.; Rodney Wallace, Fitchburg, Mass. The only new director is Mr. Wallace, who takes the place of Hon. Alvah Crocker, deceased.

**Portland & Ogdensburg.**—At the adjourned annual meeting in Portland, Me., Jan. 26, the following directors were chosen: S. J. Anderson, D. W. Clark, J. E. Donnell, Joel Eastman, D. A. Hastings, Horatio N. Jose, W. F. Milliken, W. L. Putnam, J. S. Ricker, A. Spring.

**Lancaster.**—At the annual meeting in Lancaster, Mass., recently, the following directors were chosen: F. D. Brigham, P. B. Brigham, W. E. Faulkner, Jacob Fisher, S. H. Howe, Amory Maynard, George A. Parker, F. W. Warren, C. H. Waters.

**Providence & Worcester.**—At the annual meeting in Providence, R. I., February 1, the following directors were chosen: Wm. S. Slater, Earl P. Mason, James Y. Smith, George A. Leete, John R. Balch, Moses B. I. Goddard, Providence, R. I.; Gideon L. Spencer, Pawtucket, R. I.; Lyman A. Cooke, Woonsocket, R. I.; Estus Lamb, Blackstone, Mass.; Paul Whitin, James C. Whitin, Whitinsville, Mass.; Isaac Davis, Henry Chapin, E. B. Stoddard, Worcester, Mass.; Eben B. Phillips, Boston. The only new director is Mr. Goddard, who succeeds John Carter Brown, deceased.

**Toledo, Wabash & Western.**—Col. R. N. Andrews, heretofore Superintendent of the Western Division, has been appointed General Superintendent with office at Toledo, O. Charles H. Bradley, Superintendent Eastern Division, has been transferred to the Western Division, with office at Springfield, Ill. R. N. Wade, heretofore Master of Transportation of the Western Division, has been appointed Superintendent of the Eastern Division. There has been no General Superintendent for some time past.

**Eastern.**—At the annual meeting in Boston, February 1, the following directors were chosen: Samuel Hooper, Franklin Haven, Benjamin E. Bates, Boston; John Cummings, Woburn, Mass.; Henry L. Williams, Salem, Mass.; Samuel C. Lawrence, Medford, Mass.; John Woodredge, Lynn, Mass.; James W. Johnson, Enfield, N. H.; Frank Jones, Portsmouth, N. H. Messrs. Bates, Cummings and Lawrence are new directors, replacing B. F. Stevens, Thornton K. Lothrop and Anson P. Merrill.

**Chesapeake & Ohio.**—Mr. W. E. Ludlow has been appointed General Western Agent, with headquarters in Cincinnati.

**Illinois Central.**—The board of directors has elected Mr. John M. Douglas, of Chicago, President, in place of Mr. Wilson G. Hunt, resigned. Mr. Douglas was President for many years until recently, and retired on account of ill health. He has been Acting President for some months past.

—At the meeting of the American Society of Civil Engineers, January 6, the following were declared elected members: Thomas L. Casey, Washington, D. C.; Joseph N. Du Barry, Baltimore; Niles Mitander and George S. Morrison, New York; Glen W. Parsons, Ogdensburg, N. Y.; and Sutherland M. Prevost, Bedford, Pa., Members; Edmund L. Du Barry, Washington, D. C., Associate; Wm. L. Baker, Detroit; Charles O. Brown, Paterson, N. J.; Charles L. Burdett, Hartford, Conn.; George Burham, Jr., Philadelphia; and William B. Knight, Washington, D. C., Juniors.

### TRAFFIC AND EARNINGS.

—The earnings of the Great Western Railway of Canada for the week ending January 8 were: 1875, \$14,838; 1874, \$24,915; decrease, \$10,077, or 40% per cent.

—The earnings of the Grand Trunk Railway for the week ending January 9 were: 1875, \$34,600; 1874, \$40,600; decrease, \$6,000, or 14% per cent.

—The earnings of the Boston, Barre & Gardner Railroad for the year ending September 30, 1874, were:

Earnings (\$3,100 per mile)..... \$111,505.36

Expenses (75.83 per cent.)..... 84,556.09

Net earnings (\$749 per mile)..... \$26,949.27

—The shipments of iron ore and pig iron from the Lake Superior region during the year ending December 31 were as follows:

1874. 1873. Increase. Decrease. P. c.

Iron ore, tons..... 935,488 1,167,379 ..... 231,891 19.9

Pig iron, tons..... 90,494 71,507 18,987 ..... 26.6

The decrease is not so large as was expected, but many iron works had contracts outstanding for ore which they have not smelted.

—For the week ending Jan. 23, flour and grain receipts at Western receiving cities were 75,502 barrels of flour and 1,940,841 bushels of grain of all kinds in 1875, against 124,400 barrels of flour and 2,919,176 bushels of grain in 1874. The decrease is 40 per cent. in flour and 33% per cent. in grain.

There is no increase in any grain, and the decrease in wheat is 756,000 bushels, or 52% per cent. For the crop year from Aug. 1 to Jan. 23, the receipts at these places were 2,872,325 barrels of flour and 77,514,108 bushels of grain of all kinds in 1874-75 against 3,156,847 bushels of flour and 99,573,062 bushels of grain the preceding year, the decrease being 9 per cent. in flour and 22 per cent. in grain. The grain receipts for the corresponding period in 1872-3 were less than 7 per cent., and in 1871-72 about 8 per cent. greater than in 1874-75. The shipments eastward from these places from Jan. 1 to Jan. 23 (all by rail) were 280,684 bushels of flour and 2,660,609 bushels of grain in 1875 against 456,532 barrels of flour and 5,546,894 bushels of grain in 1874. The falling off in the winter shipments is thus enormous.

—The coal traffic of the Cumberland & Pennsylvania Railroad for 1874 was as follows:

Tons.

Carried to Baltimore & Ohio Railroad..... 1,835,443

Chesapeake & Ohio Canal..... 767,064

Pennsylvania Railroad..... 67,671

For local use..... 40,717

Total..... 2,410,895

This is a decrease from 1873 of 263,206 tons, or 9.8 per cent.

—The earnings of the Denver & Rio Grande Railroad (main line) for the third week in January were: 1875, \$4,501; 1874, \$4,789; decrease, \$288, or 6 per cent.

—Baltimore grain receipts for January were as follows:

Wheat. Corn. Oats. Rye. Total.

1875, bushels..... 173,828 978,142 39,402 7,629 1,198,101

1874, "..... 551,190 966,444 79,407 30,047 1,626,688

The decrease in wheat is 68% per cent.; in oats, 50% per cent.; in rye, 74% per cent.; the increase in corn, 1% per cent., and the total decrease 25% per cent. The flour receipts for the month were: 1875, 122,350 barrels; 1874, 145,930; decrease, 23,580 barrels, or 16% per cent.

—The earnings of the St. Louis, Iron Mountain & Southern Railway for the second week in January were: 1875, \$78,633; 1874, \$64,375; increase, \$14,258, or 22% per cent.

—The earnings of the St. Paul & Sioux City Railroad for December were: 1874, \$62,171; 1873, \$51,369; increase, \$10,802, or 21 per cent. For the year the earnings were: 1874, \$825,501; 1873, \$764,522; increase, \$60,979, or 8 per cent.

—The earnings of the Philadelphia, Wilmington & Baltimore Railroad for the year ending October 31 were:

1874. 1873. Increase. Decrease. P. c.

Earnings..... \$2,946,242 68 \$3,159,120 72 ..... \$212,878 04 6.7

Expenses..... 1,170,640 71 2,042,569 90 ..... 871,929 19 42.7

Net earnings..... \$1,775,601 91 \$1,116,550 82 ..... \$659,051 09 58.9

Earnings per mile, 1874, \$26,543; 1873, \$28,461. Per cent. of expenses, 1874, 39.73; 1873, 61.64.

—The receipts of crude petroleum at Pittsburgh for January were: 1875, 31,127 barrels; 1874, 153,85; decrease, 122,723 barrels, or 400.8 per cent. The shipments of refined for the month were: 1875, 11,595 barrels. 1874, 15,170; decrease, 3,575 barrels, or 33.6 per cent. The receipts for the month were the smallest in eight years.

—At Chicago for the week ending Jan. 30 there were received 49,630 barrels of flour and 1,172,470 bushels of grain in 1875, against 65,544 barrels of flour and 1,274,539 bushels of grain in 1874. The decrease in flour is nearly 25 per cent., in grain 8 per cent. The corn receipts were 3% times as great as last year.

—The exports of hog products from Nov. 1 to Jan. 23 were 145,069,373 lbs. in 1874-75 against 188,304,308 lbs. in 1873-74, the decrease being 23 per cent. The number of hogs packed in the West during the same period was 4,701,193 this year and 4,878,192 last year. The hogs this year are about 9 or 10 per cent. lighter.

### PERSONAL.

—Mr. J. H. Devereux has resigned his position as President of the Atlantic & Great Western Railroad Company. His reason is that he has been appointed Receiver and considers that he cannot properly continue to hold both positions.

—Mr. Thomas Hooper has resigned his position as one of the trustees of the Cincinnati Southern Railway. It is stated that his reason is that his views are not in harmony with those of the majority of the trustees.

—Mr. Alfred P. Boller has resigned his position as Vice-President and Engineer of the Phillipsburg Manufacturing Company.

—Mr. J. M. Webster has resigned his position as Vice-President and Manager of the St. Louis, Lawrence & Western Railroad.

—Mr. Southworth Shaw, an old Boston merchant, died in that city, January 29, at the age of 73 years. He was formerly President of the Boston & Maine, Treasurer of the Cape Cod road, and had been connected with other companies.

### RAILROAD LAW.

#### Enjoining the Payment of Dividend.

In the suit brought before Judge Tappen, of the New York Supreme Court, by Jacob Rabino against the Lake Shore & Michigan Southern Railway Company, to enjoin the payment of the recently declared dividend of 3% per cent., the temporary injunction granted on the bringing of the suit was dissolved January 30, the Court giving its conclusions and order in the following language:

1. That declaration of the dividend does not come within the case of a breach of trust arising from a misapplication or waste of the funds.

2. That the directors' power to declare and pay dividends is not questioned, and the exercise of that power will not be interfered with on the case now made.

3. That the plaintiff's acquisition of the stock after such dividend was declared and made known does not prevent his maintenance of the action for the establishment of such facts, and the demand for such relief as he may be advised; but that it does go to the question of enjoining payment of such dividend to the other, and, seemingly, the great body of shareholders.

By reason of these conclusions, and within the rule that where the whole equity of the bill is denied, an injunction will not be continued, and that the power of the court should be exercised with caution, deliberation and sound discretion the motion to continue the injunction *pendente lite* is denied.

#### A Railroad on the Ice.

A Duluth newspaper proposes a railroad on the ice from Duluth to the Sault—the whole length of Lake Superior. It would simply spike the rails to the ice without grading, filling, excavating, ballasting or ties. The track, it says, could be taken up every spring and stowed away. The road would be about 400 miles long, and a dead level. It claims that the ice lasts till April; it is thick enough to sustain a train of cars; the freight cars could be transferred to the ice without reloading, and the rails could be spiked to the ice, or they could be fastened in a frame and laid on the ice without spikes, "which would do just as well."





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## Editorial Announcements.

**Addresses.**—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

**Contributions.**—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

**Advertisements.**—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

## THE READING REPORT.

The Philadelphia & Reading Railroad is almost unique among railroad companies. To look at its lines on the map, though with a good knowledge of the population and industries of the towns and counties through which it runs, one would hardly suspect it to be of more than limited and local importance. A main line less than a hundred miles long from Philadelphia northward to a little interior city might indeed have a great and national importance if it supplied the sole or chief outlet to tens of thousands of miles of other railroads beyond it. We have had an example of such a line in the railroad from New York to Philadelphia, which, notwithstanding the importance attached to the sole railroad connection between the two chief cities of the continent, would hardly have been classed with the leading railroads of the country but for the fact that it served as the outlet of half the United States to its metropolis. But the Reading, though it connects with some important lines, interchanges comparatively little traffic with them. The railroads west, northwest and southwest of Philadelphia are connected with it chiefly by the Pennsylvania Railroad and use the Reading only to a very slight extent. If you go to Buffalo, Chicago, St. Louis, Cincinnati, Pittsburgh, Washington or New Orleans, you will have no occasion to use the Philadelphia & Reading Railroad—you will indeed find it difficult to travel on it—unless you start from a station on its lines. To a very unusual extent it is independent of other railroads, and other railroads are independent of it. Yet it is unquestionably one of the most important railroads in the country or in the world; its earnings per mile are among the greatest, and the traffic on its main line is, perhaps, the heaviest in the country or in the world. And its position is owing wholly to the fact that it is practically the sole outlet for about a quarter of the product of the Pennsylvania anthracite coal, the chief fuel of all the large cities of the East and a favorite fuel for the whole country east of the line drawn from Washington to Buffalo, largely consumed north of the lakes in Canada, and even west of them in towns of the Prairie States—being even the principal domestic fuel in Chicago, eight hundred miles from the mines, and only fifty miles from inexhaustible deposits of bituminous coal.

The little line, 95 miles long, from Philadelphia to Pottsville has put out branches everywhere in the adjacent coal districts and acquired control of several lines not properly coal roads, until the company has in its management 725 miles of road, 327 of which it owns. These are

provided with an enormous rolling stock, amounting to the equivalent of about 22 eight-wheel cars per mile of road, the cost of the equipment alone being greater than that of many equipped roads of the same length.

This company has made great investments outside of its railroads. A great coal railroad which carries for shipment largely must needs have certain very costly fixtures which are unknown to other railroads. It must be able to handle a vast amount of its peculiar freight at its termini, and to store it by the acre on navigable waters at some port where it can be shipped with the least possible handling and expense. But the Reading Company, having had its coal docks blocked and its traffic interrupted by the lack of vessels to carry away the coal at times when shipping was scarce, has invested more than two and a half millions in steam colliers, which serve especially to carry from its yards at Port Richmond, near Philadelphia, to New England ports; it works two canals, and, more than all, it has, through the Philadelphia & Reading Coal and Iron Company, of whose securities it is the chief owner, invested immense sums in anthracite coal lands, owning, as Mr. Gowen, the President, says, "at least one-third of all the anthracite coal land of Pennsylvania." Moreover, it conducts directly the mining operations in many of its mines. It is thus a coal owner, a coal miner, and a coal carrier by rail, canal and sea; and we may add a coal warehouseman and a coal dealer. It does not do all this work directly, but it dictates the operations of the Coal and Iron Company, and is the chief gainer by its success and loser by its failure.

We see, then, that this company's importance is greater than that of any simple coal carrier. Its business is not only immense, but it consists chiefly in carrying its own property.

As a coal carrier, the Philadelphia & Reading Railroad is admirably situated for working economically. Not only is the bulk of the traffic so great as to make it possible to have all possible facilities, but the peculiarities of the road are favorable. The coal is at its upper end, and the descent is almost continuous to the coal wharves. Thus the loads taken by engines are enormous. The average train load from the coal region is reported by the Superintendent to have been 646.7 long tons, or 724 ordinary tons of 2,000 lbs., which is equal to 72 full loads of ordinary eight-wheeled cars. Now, though the coal trains all run back empty, this is equivalent to an average load of 362 tons for the round trip. But on the New York Central & Hudson River, the trunk line with the easiest grades, the average freight train load was only 140 tons. The coal road has the immense advantage of starting always with full cars and a full train, and taking nearly all the coal through. Indeed, the average load of freight on the whole system of the Reading must be much smaller than 362 tons, though we cannot say just what it is, for want of a statement of freight and coal train mileage.

Anthracite coal is one of the simplest articles of transportation; there is hardly anything except gravel which can be carried and handled cheaper. With proper facilities it is loaded and unloaded with great rapidity and little expenditure of labor, and the handling does not injure it. Bituminous coal must be treated much more gently, and the product of most Northwestern mines would be changed to coal dust by the rough treatment which anthracite bears. It needs no protection from sun or rain or frost, and is so cheap that no great precautions are needed to protect it from thieves. Against these circumstances which are in favor of lowness of cost for coal transportation is the fact that the average haul is short, on the Reading not more than a hundred miles, so that there is a terminal expense for every fifty miles, while on a shipment from Chicago to New York there would be but one for 450 miles.

The receipt per passenger, per ton of merchandise and per ton (of 2,000 lbs.) of coal per mile on the Reading Railroad for the last year (ending with November, 1874,) with the expense and the profit were:

	Receipt.	Cost.	Profit.
Per passenger mile	2.54c.	1.82c.	0.72c.
Per ton of merchandise per mile	2.25c.	1.41c.	0.84c.
Per ton of coal per mile	1.64c.	0.95c.	0.69c.

These rates are higher than on several of the long lines with heavy general traffic, and the cost also. On the New York Central & Hudson River, for instance, whose average freight rates are a little higher than on three or four other roads, the average receipt for the last year reported was 2.13 cents per passenger and 1.46 cents per ton of freight, and the average expense 1.28 cents per passenger and 0.85 cent. per ton of freight per mile. The shorter hauls of the Philadelphia & Reading have a tendency to increase the expenses, as we have said, and moreover, it has both to load and to unload nearly all its freight, as it both receives and delivers at its stations, whereas on most railroads most of the through freight is either received from or delivered to another railroad in the cars, so that the company has but one terminal expense on each shipment, and on the New York Central a very large part of the through freight simply passes over the road and is neither loaded nor unloaded at any of its stations.

This company is not only eminent for the extent of its traffic, but for its financial success—things that are not always connected, a very large number of the greatest rail-

roads in the country being anything but profitable. It has not failed to earn and pay a ten per cent. dividend on its stock every year since 1864, when it divided 7 per cent., and its credit is so good that there is hardly any limit to the sums it can borrow at 6 per cent. It is this credit which has enabled it to secure its enormous coal properties of late years. Probably a ten per cent. income on the purchase price would be esteemed a very moderate return to individual owners of anthracite lands; if so, the Reading Company, paying but 6 per cent. on the price, will have a large margin for profit, which will enable it to make good returns in bad years. But even if there should be no profit on the coal property, and the investment should barely pay interest, the obtaining of it was yet a great advantage to the company, as it secures to the railroad under almost any imaginable circumstances a large traffic for all time. No competitors that may arise can divert from it its chief business. Circumstances may make that business more or less profitable, but such as the profits may be, the railroad company is sure of them. The other great anthracite roads are similarly situated, to a greater or less extent, at least, but aside from them there is hardly a railroad in the country which has its business so well assured. In the case of the Reading, the results have been so satisfactory that the investments of the company have been increased from about \$30,000,000 at the close of the war to more than \$90,000,000 at the date of this report, nine years later.

There are few corporations in the country, however extended their operations, which have a larger capital. The Pennsylvania Railroad itself, with interests in every State from New England to the Mississippi and from the Potomac and the Ohio northward, has assets footing up but fifty millions more, while the New York Central & Hudson River's general account amounts to \$128,000,000. The Philadelphia & Reading is incomparably the most compact property of the kind, of similar value, on the continent, and this compactness and simplicity (in spite of its large and varied business outside of railroad transportation), make it much easier to conduct its affairs successfully. The Pennsylvania may be compared to an army of occupation, with detachments in every district of a country, having more or less connection with each other; the Reading to an army massed for definite action on a definite point, wholly under its commander's eye. The administration of the latter has been doubtless one of the most successful in the country; but it is a much less complex affair than the management of the Pennsylvania's property. Indeed, in the case of the latter, there are some parts of it which cannot be directed by the mere word of command, and after the administration has fully concluded what is best to do it may have to resort to persuasion, negotiation or even stratagem in order to get it done. The two properties are therefore so unlike that it is difficult to compare their administrations.

The Reading, by its comparatively independent position and compactness, presents an unusually good field for efforts at administrative and other reforms, and for experiments in the service. The opportunities have been largely improved, and the company has several unusual features concerning which it reports. For instance, like all European railroads, it conducts its own express business, as but very few other American roads do, and it reports that the experiment has been completely successful in spite of some artificial obstacles. Last year it ceased issuing free passes, being the first of Eastern railroads to do so, so far as we know, and Mr. Gowen says that "the abolition of this most pernicious system has not only added to the revenues of the company, and greatly relieved the executive officers from the thousands of annoying and pertinacious demands heretofore made upon them, but it is believed that it has given entire satisfaction to the general traveling public. So long as certain favored individuals were allowed to travel for nothing, each person buying a ticket felt the injustice of the discrimination which compelled him to pay for what less deserving people obtained as a gift; but where an inflexible rule is applied to all, without fear, favor or affection, it is followed by an immediate and cheerful acquiescence."

The company to an unusual extent manufactures its own supplies, a work which it is not easy for a great corporation to do economically. Most companies construct a large part of their cars, and some build most of their locomotives, and it is not easy to keep establishments for repairs perfectly effective without doing some of this work; but for several years nearly all locomotives acquired by the Reading, except those obtained in the purchase or lease of other railroads, have been constructed at its own shops in Reading, which turned out nineteen new engines in 1871, seventeen in 1872, eighteen in 1873, and four last year; and of its whole present stock of 405 locomotives, 298 were constructed by the company. The company, too, has its own rolling mill for rolling new iron rails, and manufactures its entire supply, though it buys steel rails yearly. There is no report as to the cost of these iron rails, but their quality appears to be extraordinary. Of those in the track more than six years, under the enor-



mous traffic of this road, with locomotives weighing 72,000 and even 80,000 lbs. (though mostly running at low speed), less than half have worn out.

The report is notable for its presentation of sundry train expenses, and its full accounts of some of the shops. There is a balance sheet for the iron foundry, one for the brass foundry, and one for the steam tilt hammer shop, in which all materials, supplies and wages are charged, with the average price of the former, and the product with its market value is set opposite—making, by the way, an extremely good showing for the two foundries, and a moderate profit from the hammer shop, where, among other things, 3,325 axles were turned out. The expenses of trains are given per trip over the main line for coal trains, for freight and for passenger trains. The coal train is shown to have cost \$159.34 per round trip, 95 miles and back, carrying average through loads of 522.6 long tons of coal down, and going back empty; the passenger train costs \$40.86 for the trip of 93 miles and has an average load of 51 passengers. The freight train costs \$54.95 for the 93 miles, and has an average through load of 89.2 short tons. Some of these statements are worthy of examination and imitation, and we hope to give some examples of them hereafter.

The result of this company's operations last year ought to greatly increase confidence in its stability. One would have said that the year could not easily be more trying. The depression of business affected the manufacture of iron more than anything else, probably, and iron manufactures are among the chief consumers of coal. But the domestic consumption, as Mr. Gowen has pointed out, is by far the most important, and it is one which increases constantly. So though last year there was comparatively a trifling demand for coal from the iron works, the natural increase in the demand for domestic consumption permitted but a small decrease in production. The situation, however, might have been much worse but for the combination to maintain prices; in spite of the dulness of the times and the falling-off in the demand the price of coal was even higher than during the preceding year. The railroad companies have to base their charges for transportation to some extent on the price of coal, and a fierce competition might greatly decrease their profits. As the coal business is now situated, however, such a competition is not likely to occur, though prices may be considerably reduced. The great companies are more interested in securing a very large consumption of coal than the highest rate of profit per ton, and when consumption can be largely increased by a reduction of price, they may find it greatly to their interest to sell much at a low price rather than to sell little at a high one.

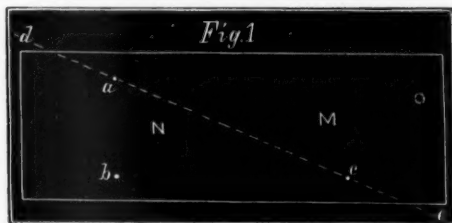
#### AN ENGLISH RAILROAD ACCIDENT.

Late numbers of the English engineering journals received at the time we write all contain accounts of and comments on the accident which occurred on the Great Western Railway in England on the day before Christmas. News of this accident was received by telegraph and announced in the daily papers in this country immediately after its occurrence. Without copying the full particulars of the accident as they are given in *Engineering*, we will

gines is of especial value. We will review that of the two men working the second or following engine first. When very near to the Cherwell River bridge, the attention of the driver was attracted by a motion of the passenger communication cord, which was not, however, sufficient to sound the gong. His attention thus engaged, he looked back and observed that one of the adjacent carriages, apparently the same that had been added at Oxford, was throwing snow and ballast around. He immediately shut off steam and whistled for the brakes, but on arriving at the canal bridge close at hand, the coupling connecting with the first carriage broke, and the two engines, taking off the brakes, went forward to avoid the possible danger of the train overrunning them.

"The evidence of the fireman of this as well as of the leading engine is, of course, somewhat similar, but contains some important facts. Both agree that before reaching the Cherwell River bridge they saw, on looking back, one of the passengers in the first compartment of the first carriage, waving both arms out of window, and attempting to attract the notice of the driver. On perceiving him, instant action was taken; the pilot engine taking the initiative as the brakes were being put on, when the driver of the second engine sounded the alarm. From the evidence it would appear that the train travelled about 186 yards from the time the alarm was first given to the moment when the carriages broke away. If this be so, we come to the first and most important fact which this wretched disaster teaches—that if the train had been provided with an efficient continuous brake, it would have been brought to a standstill within the time at the disposal of the driver.

"The statement contained in the letter, the extract from



which we publish above, appears to fix most conclusively that the carriage which caused the accident was situated within three or four vehicles of the front of the train, while the evidence of the driver and fireman seem to point out clearly that it was the first coach—that is the one attached at Oxford. That the alarm was given by one of the passengers in this carriage appears to strengthen the probability that such was the case, and the question then arises how long had he been endeavoring to attract the attention of the guards or drivers. We know that a futile effort had been made to give the signal on the gong by means of the cord, and this, as well as the previous fact, shows that the passengers were aware of their imminent danger, and had been so presumably from the instant the first portion of the tire broke away some 425 yards from the scene of the accident. There was, therefore, of a certainty, deficient brake power, and apparently deficient means of communication between the passengers and driver.

What we wish to call attention to is the safe-guards which the American system of rolling-stock provides for the prevention of any disastrous consequences in case of the breakage of a tire, wheel or axle, or similar accident. The almost exclusive use of cast-iron wheels without tires under cars and tenders, and for the leading wheels of engines, of course makes an accident from the breaking of a tire a very rare occurrence in this country. In lieu thereof, we have, however, frequent breakages of wheels; but whether the latter are more frequent or less so than the breakage of tires would be, if they were generally used, we have no means of knowing. Testimony has been given to prove both sides of this proposition. But assuming, what is true, that wheels, whether with or without tires, and axles, are liable to break, the question presents itself, what will be the relative security provided by the European and the American system of constructing rolling stock against disastrous consequences from such an acci-

dent? In the case of a four-wheeled English carriage, if one of the wheels on an axle breaks, the vehicle, being deprived of one of its supports, then rests on three points, and one-half the whole weight overhangs the supports. Thus, in figure 1, let the rectangle represent a plan of a four-wheeled English carriage. Now if one of the wheels or tires should break, the carriage must rest on three points,  $a, b, c$ . All that half  $M$  of the weight above the dotted line  $de$  must therefore overhang the points of support,  $a$  and  $c$ . If therefore the weight of  $M$  should exceed  $N$ , the other half of the car, it would tip down on the side  $M$  of  $ac$ . This would be liable to occur, too, from the sudden lurches of the train if one side was not loaded more than the other. In case of the breakage of a wheel, therefore, it will be almost impossible to keep such a vehicle on the rails. Let us now take an American car, the body of which is represented in plan by the rectangle  $fgkl$ , fig. 2. It rests on the centres,  $o, o'$ , of two trucks or bogies, whose frames are represented by the rectangles  $jklm$ , and  $j'k'l'm'$ . These trucks in turn rest on four wheels or points of support,  $abc d$ , and  $a'b'c'd'$ . Suppose now that one of the wheels,  $d$ , should break. The truck would then rest on the three points  $a' b' c'$ , or on a triangular base enclosed within those points. The weight of the car-body would

rest on the centre plate  $o'$ , which is in the hypotenuse of the triangle. This would permit the corner  $d'$  of the truck to tip down. But although the weight of the car-body rests on the centres  $o, o'$  of the trucks, there are also side-bearings  $s$  and  $s'$  on each side. These have usually a small amount of space between them and the car-body so as not to carry the weight of the latter under ordinary circumstances, but are intended to check the rolling motion of the car on a rough track. Now if the support of the corner  $d'$  of the truck should be removed so that the latter would tip down, the portion on the other side of the dotted line,  $a' c'$ , would be raised up so that it would soon bring the side-bearing  $t'$  of the truck in contact with the car-body, and thus a portion of the latter would then rest on the truck frame at that point. Of course the further down the corner  $d'$  falls, the more the side-bearing  $t'$  will be raised, and the greater will be the weight which will rest on it. In this way the weight of the car-body would rest on two points,  $o'$  and  $t'$ , of the base  $a' b' c'$ , so that the latter would afford an adequate temporary support for that end of the car.

Truck safety chains afford still another safeguard by preventing the corner  $d'$  from dropping down if a wheel or axle is broken. It is evident that if the corner  $k'$  of the truck frame is attached to the car-body by a chain,  $k' g$ , it will be impossible for that corner to fall down in case of the breakage of a wheel. These attachments afford a double safeguard, which, we regret to say, is not universally used in this country.

As to the practical efficiency of these safeguards, many cases could be cited in which a car or engine ran a long distance with a broken truck-wheel or axle, so that the weight on one of the trucks had to be, for the time, carried on three wheels, and we regret that it is necessary to say that few persons who travel much on American railroads escape entirely the disagreeable experience of riding over cross-ties with some of the wheels off the rails. We do not of course mean to say that the passengers are always so fortunate as to escape entirely unharmed in such cases, but what we contend for is that with our system of double trucks such accidents are attended with much less danger than they would be with European rolling-stock, and the disastrous consequences are greatly reduced thereby. Were it not for some such redeeming feature in our cars, the danger and sacrifice of life and limb on our imperfectly-built roads, inferior quality of rails and rough tracks would be very much greater than it now is. We are offering no excuse for any of the latter evils, in remedying which we have very much to learn from European engineers, but even with the best track there is danger of breaking wheels, tires, or axles, and if the safe-guards to which we have referred act so efficiently when there is so much danger as there is on American railroads, it seems probable that they would add to the security when such accidents, though now rare, are nevertheless not unknown.

There is one feature in the Shipton disaster which, notwithstanding its sad consequences, will nevertheless excite a smile in most American railroad men when they read it. We and they are, it is thought, ready to make allowances for the strong force of national habits, customs and



summarize the first portion by saying, that the train at the time the accident occurred consisted of fifteen English cars and was drawn by two engines. *Engineering* adds:

"For the details of this accident, we may take the experience of the drivers and firemen of the two engines, and of one of the passengers, who occupied a seat in the third or fourth carriage from the front of the train at Paddington, the fourth or fifth at the moment of the accident. Writing to the *Times*, this gentleman says, 'About ten minutes later, and shortly after passing Woodstock-road Station, I heard three sharp short beats of the engine whistle. I knew the significance of this whistling, and my attention was fixed by it. Immediately afterwards, within a second or two, there were indications of something wrong in front. I heard a grating noise as of wheels upon the ballast. I turned my head over my shoulder, and looked through the side window, and saw small pieces of timber fly past and into the hedge at the foot of the embankment. In another instant the front wheels of our carriage appeared to leave the rails, and by a sudden jerk we were disconnected from the carriage in front, the coupling-iron breaking. We then left the rails entirely, and it appeared to me that the after-part of the train was overrunning us. A second or two of violent rocking ensued, in the course of which the carriage seemed to tilt over to my side and towards the slope of the embankment.'

"The cause of this disaster was shortly afterwards discovered, for about one mile and a half from Woodstock-road Station a fragment of a carriage tire was found on the line, and 242 yards further another and larger piece was picked up. Beyond this, and on the Cherwell River bridge were found traces on the sleepers and on the ballast, where the carriages had left the rails, and a short distance further was the greater portion of the train thrown into a general wreck.

"The evidence of the drivers and firemen of the two en-

gines is of especial value. We will review that of the two men working the second or following engine first. When very near to the Cherwell River bridge, the attention of the driver was attracted by a motion of the passenger communication cord, which was not, however, sufficient to sound the gong. His attention thus engaged, he looked back and observed that one of the adjacent carriages, apparently the same that had been added at Oxford, was throwing snow and ballast around. He immediately shut off steam and whistled for the brakes, but on arriving at the canal bridge close at hand, the coupling connecting with the first carriage broke, and the two engines, taking off the brakes, went forward to avoid the possible danger of the train overrunning them.

traditions, and how by long usage and association they acquire the authority of law. Here, for example, until within a few years, first and second class cars were unknown, presumably because our "institutions" do not recognize separate classes in the community. The difficulty was overcome by Mr. Pullman when he named his first-class cars "drawing-room cars," after which the public submitted to them gracefully; whereas if they had been called first-class cars they would probably not have been tolerated here, where every man thinks himself as good as another, and somewhat better if he don't wear clean clothing. Now, making all allowance for such natural predilections, it is a matter of constant surprise that on English railroads the check-system for baggage is not adopted and that the use of the bell-cord is not general on all roads. But that a bell-cord should be used and put outside of the cars seems here like carrying an anchor for the safety of a ship and stowing it away in the hold.

From all the light before us, it seems as though the great loss of life referred to could have been avoided in the accident referred to if, 1, our system of cars and running gear had been used in the cars; 2, by an accessible bell-cord, or 3, by the use of an efficient continuous train brake.

We have said nothing about the use of six-wheeled car-



riages on European roads or six-wheeled trucks here, because the principles involved could be illustrated sufficiently well without. The first would of course be safer than four-wheeled carriages, but the security offered by the latter would also be increased in about like proportion.

#### The Toledo, Wabash & Western.

The announcement that this company has failed to pay the February interest on all classes of its bonds could hardly have been unexpected since the publication of the report for 1873, (which occurred late in 1874), but it has, nevertheless, a depressing effect. Two or three years ago this road seemed one of the most promising of the non-dividend paying lines. Its traffic was large and growing fast, and it seemed reasonable to suppose that its earnings and its profits would grow with them until perhaps the company would become in a few years one of the most prosperous in the West. In 1871 the earnings reached \$9,466 per mile, which is as much as many roads earn which pay 8 and 10 per cent. dividends, and about equal to the receipts of the Chicago & Alton, the Illinois Central, and the more profitable Western lines. It had a funded debt of a little less than \$30,000 per mile on the road owned, which seemed perfectly secured, and the stock sold as high as 80 in 1872. The reports of the company, however, were not quite complete. They covered only the property owned by the company—about 600 miles of railroad. But during the early part of the rage for railroad construction in Illinois the company had made permanent leases of a system of branch lines, measuring 306 miles in all, 37 miles in Indiana, 70 in Missouri and the rest in Illinois. These roads seemed to have been secured at a very low rent, it being an obligation to pay 7 per cent. interest on their bonds, which amounted to \$5,292,000. This is at the rate of \$17,300 per mile, the interest on which is \$1,211. Twelve hundred dollars per mile seems to be a low rent for a railroad in a populous and fertile country; but in most cases the new branch railroads of the West have proved dear at any price. However, the Toledo, Wabash & Western reports do not tell us what the result of the working of these branches has been. They were very imperfect structures when leased, and nearly or entirely destitute of equipment, so that a large expenditure of new capital was needed to make them effective. They doubtless have contributed a large amount of traffic to the main line, though that may not always have been an advantage.

The accounts for 1874 have not been published yet; but from the returns of the eight years preceding we may observe the tendency of the earnings:

	Gross receipts.	Net earnings.		Gross receipts.	Net earnings.
1866.....	\$3,717,386	\$906,200	1870.....	\$4,544,641	\$1,383,766
1867.....	3,809,354	1,022,471	1871.....	5,736,666	1,959,838
1868.....	4,013,208	1,123,588	1872.....	6,008,978	1,628,182
1869.....	4,252,343	1,200,938	1873.....	5,738,808	1,391,429

From the first to the last year the increase in gross earnings is 54 per cent., in net earnings 47 per cent. But during the first five years, notwithstanding the great increase in the leased lines which contributed to the traffic of the road, there was no large increase in net earnings: they were only \$130,000, or 11 per cent., greater in 1873 than in 1869, the yearly interest on the debt (exclusive of the interest paid by way of rentals) having increased meanwhile by about \$280,000. Within that period however, there was a great improvement in the company's affairs, which culminated in 1871, when the net earnings were greater by nearly one half than in 1873, and the surplus was equal to a 4 per cent. dividend on the stock. The progress made during the two or three years ending with 1871 gave great confidence in the future of the road, and to many it may seem unnatural that this progress should have been interrupted, at least before the panic of 1873 disturbed the business of the country generally. As the figures of the last year reported include but three months after the panic, we cannot charge its unsatisfactory result, when there was a deficit instead of a surplus, to that.

The last report of earnings published included the eleven months ending with November, 1874, and for this period there was a decrease of 11 per cent. in the gross receipts, as compared with those for the same period in 1873, amounting to \$582,000. Whether the reduction in expenses equalled this reduction in receipts, of course we do not know, but as there was a deficit the previous year, such a reduction would not be sufficient to enable the company to meet its interest, to say nothing of its rentals.

In reviewing the company's reports from year to year we have endeavored to show why the net earnings have decreased since 1871. The grain carriers of the West may be classed under two general heads: those which carry from the farmers to the Lakes, and those which carry to the trunk lines, which forward the grain to the East. All the lines to the Lakes have the rail connections to the East as well, but for those extending southward from the Lake the rail connection is indirect. The Wabash, though its terminus is on Lake Erie, belongs properly to the second class. Its lake terminus is so far

east that it forms a longer and costlier outlet to the water route for most of the country on its lines than other railroads leading more nearly northward. Now, the result of this is that while the Wabash is generally the shortest route to the East from its stations, it is the cheapest only when lake rates are comparatively high. At such times it can carry most of the grain from its lines in Illinois at remunerative rates. When, however, lake rates are very low, as they have been for two years past, if it carries grain which can reach railroads to Lake Michigan, it must do it at unprofitably low rates. It usually carries a good deal of grain, whatever lake rates may be, but it makes very little profit in this traffic when it has to compete with the water rates which prevailed in 1873 and 1874. Lake rates were very low in 1873, and we see that the Wabash did not earn the interest on its bonds; they were still lower in 1874, and, though we have no report of the company's earnings, we are informed that the company can pay the interest on no class of its bonds, and we know that it has a large floating debt, including wages of its employees, due for two or three months.

It is true that this is an incomplete explanation of the company's difficulties, because it does not take into account the results of working the leased lines, of which we have no complete reports. But these lines are likely to be valuable only when the general traffic of the road is profitable. Most of them are in districts which send their produce to Chicago chiefly when lake rates are low. None of them have any considerable through traffic, and it is not often easy to make such lines earn net even the \$1,200 per mile which they cost their lessee. The company gave up its Missouri line about two years ago to the Missouri, Kansas & Texas, and is probably none the worse for the loss. For the year ending June, 1874, the report of the Illinois Railroad Commissioners give the following account of the profits of these leased lines:

	Net earnings.
Lafayette, Bloomington & Mississippi.....	\$54,230
Pekin, Lincoln & Decatur.....	47,833

Hannibal & Naples, deficit .....	\$12,063
	29,518

Net earnings of all leased lines.....	\$72,545
The rentals of these lines are.....	\$275,340

Thus for that year the roads cost the company about \$200,000 more than they earned.

It is to be regretted that the company did not issue a statement of its accounts for 1874 in connection with its appeal to its bondholders to fund their coupons. Their action is likely to be governed by the actual financial condition of the road, and they can hardly be satisfied with information concerning its condition a year ago. The new administration has made earnest efforts to reduce the expenses of the road, and probably has succeeded; but the measure of its success we shall not know until we have reports of the amount of work done and the cost of doing it.

#### The Managers' Meeting.

The meeting of railroad managers whose companies have signed the Saratoga agreement was held at the St. Nicholas Hotel, New York, on Wednesday last, as announced. The Pennsylvania, New York Central and Erie were all represented, and many of their connections, but many companies were conspicuous by their absence—no one appearing from the Michigan Central and the Great Western of Canada, for instance. There was a large attendance, however. The meeting of managers adjourned so short a time before we went to press that we can say no more of the result than that it was agreed to leave to the companies to settle the present difficulties as to freight rates; but to continue the Bureau and maintain the shipments concerning passenger business through them, it being hoped (perhaps expected) that when freight rates are once settled the regulation of that business can be referred to the commissioners again. A meeting of the bureau was to be held Thursday, and a meeting of freight agents very soon, to attempt to settle rates again. It is too late in the season, however, to establish the usual winter rates, however willing the companies may be. Even at the present ruinous "cut" rates very little freight is moved, and a considerable advance would simply have the effect of keeping back shipments until navigation opens. If the freight agents are ever so harmonious, they will hardly be able to make rates much if any higher than the ordinary summer rate, and with the wisest possible policy for the rest of the season, we suppose the winter's railroad business will still, on the whole, have turned out disastrously.

#### Record of New Railroad Construction.

This number of the Railroad Gazette has information of the laying of track on new railroads, as follows:

*Peach Bottom.*—The Eastern Division is three miles longer than heretofore reported, two miles of it completed in 1873 and the other in 1874. It extends from Oxford westward to Goshen, Pa.

*Chicago & Pacific.*—Extended (during January) from Genoa Ill., westward 2.6 miles to a point 68 miles from Chicago.

*Cairo & St. Louis.*—Extended from Murphysboro, Ill., southward 20 miles.

This is a total of 32½ miles of new railroad, 29½ completed in 1875.

BRITISH IRON RAILS have ceased for the time to be an article of American consumption. We imported about \$6,500,000 worth of British rails in 1874, but they were all, or nearly all, steel. The change is very great and sudden, for in 1872 our imports of British rails amounted to \$24,000,000, and in 1873 to \$12,000,000. Notwithstanding the great fall in iron since 1872, the decrease in quantities is no greater than that in values, which is owing to the fact that last year we imported only steel rails, which will last a great many years, while in 1872 we imported largely the cheapest (and poorest) iron to be found in England. It is possible that British iron rails will never again find a large market here, but by no means certain. At present American works can much more than supply the demand, and they do it at prices which the British ironmasters cannot now meet. But the latter are making great efforts to reduce the price of the chief elements in the cost of iron; they have succeeded in bringing down the prices of coal and labor very largely, but not enough yet to enable them to supply this market. Probably they will find it very difficult to do so long as the demand continues so light here. When there are not enough rails used to keep our own mills busy, our ironmasters will not be likely to let many orders go abroad. Should business revive so as to give our rolling mills a fair amount of work, the British may again secure a market here.

THE NEW YORK PRODUCE EXCHANGE has voted in favor of the rules for grading and delivering grain as agreed upon between a committee of its members and a committee of the grain-carrying railroads, after a bitter contest. It will be remembered that when originally reported the Exchange refused to adopt a clause which made the charge for "elevating out" from the floating elevator chargeable upon the consignee when the consignment is less than five car-loads. The railroad companies insisted, as they long had, in making this charge, and the action of the Exchange was simply a declaration that they would not permit grading (recognized by nearly all parties as advantageous both to the merchants and the carriers), unless the companies would change their practice concerning elevator charges. The Exchange has still some action to take before grading can begin, but we suppose that there is no doubt that it will be taken.

THE WESTINGHOUSE AIR BRAKE COMPANY, we have been told has purchased the patents owned by the Smith Vacuum Brake Company. There has been great competition between the two companies for two years past, both here and in Europe, and the English companies have often assigned as a reason for their delay in adopting a continuous brake the fact that they were trying to find the best one. We have no knowledge as to what the policy of the owner of the patents will now be.

### General Railroad News.

#### THE SCRAP HEAP.

##### Railroad Manufactures.

The Connelville Machine & Car Company manufactures frogs and crossings besides elevators and cages for coal shafts and cars.

The Vulcan Iron Works at St. Louis have been enlarged by the addition of a new mill containing trains for rolling light rails, from 30 to 45 pounds per yard. The new mill has a capacity of 60 tons per day, making the whole capacity of the works 200 tons of heavy and light rails per day.

The light locomotive works of Porter, Bell & Co., of Pittsburgh, Pa., are running nine hours per day.

A company, with a capital of \$50,000, has been lately organized in Rockland, Me., under the name of the Knowlton Platform and Car Coupling Company, for the purpose of manufacturing platform and car couplings.

The rolling mill at West Hamburg, Pa., has been sold to the Philadelphia & Reading Railroad Company, which already held a mortgage on the property.

During 1874 the Milwaukee Iron Company added to its works a merchant bar mill, the building for which is 216 by 109 feet. It contains a 9-inch, a 12-inch and a 21-inch train of rolls and space is left for an 18-inch train. There are three Siemens heating furnaces. The capacity of the new mill is 18,000 tons of finished iron per year.

The Raquet Manufacturing Company at Laconia, N. H., has received an order for two drawing room cars for the Boston, Concord & Montreal.

The Bethlehem Iron Company, of Bethlehem, Pa., has the contract for the steel rails for the North Pennsylvania's new line from Philadelphia to New York. They are to be 66 pounds to the yard.

The Schenectady Locomotive Works have received an order for ten engines for the Central Pacific.

##### Long Wire Ropes.

The Virginia (Nov.) Enterprise says that many of the mining companies on the Comstock lode are now working 2,000 feet and more below the surface, and the Savage Company is preparing to sink a shaft four thousand feet. It says:

"The new hoisting machine will be furnished with two 24-inch horizontal cylinders of four feet stroke, and will be of over 400 horse power. \* \* \* The steel wire rope to be used is to be 4,000 feet in length, and will weigh about 24,000 pounds. It is now being manufactured by John A. Roebling's Sons, Trenton, N. J. It will be a round rope, and the upper end will be two inches in diameter, but 2,500 feet of its length will be tapered, and the lower end will be 1½ inches in diameter. The reel on which this cable will wind and unwind will be conical, and the cable will wind about it spirally. The Ophir Company contemplate the erection of similar machinery, and proposes pushing its works to a like depth. The Crown Point Company already has in operation machinery of much the same character as that being erected by the Savage folks, and having a cable of sufficient length to sink to the depth of 3,500 feet."

The Iron Age says:

"We remark that John A. Roebling's Sons, of Trenton, N. J., manufacturers of the tapering wire ropes, above mentioned, have secured a patent on the same, the wires of their patent rope being continuous and tapering from one end of the rope to the other. The advantage in using these ropes for avoiding the dead load on the hoisting machinery for deep mining is very great. At a depth of 2,000 feet it is double that of the ordinary wire rope heretofore generally used; at 2,600 feet the advantage is three-fold. Practical economy will result from their use when a depth of 1,400 feet has been reached. The superior character of the tapering ropes made by the Messrs.



Roebing, with continuous wires from end to end, will be apparent to the mine operator and engineer when we state that the old method of making tapering ropes, and still in use in Europe, was and is by leaving out wires at intervals, so that a rope with 19 wires to the strand at the larger end would have only seven wires to the strand at the smaller end; and, aside from this defect would have a multitude of ends of wires along its entire length constantly liable to work out and render the rope ragged, while at the same time they would subject it to an unnaturally rapid wear and tear, especially the latter. The Roebing system secures a rope having an equal number of wires throughout each strand, and a perfectly even surface that insures the largest possible wear."

#### Carrying Dogs.

The second and third of the "Rules to Govern Baggage Masters" of the St. Paul & Sioux City and Sioux City & St. Paul roads are as follows:

"No charge will be made for dogs or hunting equipment, or game that belongs to persons that go out on the road for the purpose of hunting. If they desire voluntarily to fee the baggage masters for taking care of accoutrements, dogs, etc., the baggage masters can retain that fee as their perquisites, but will be expected to make good any damage to such articles that may arise from their own carelessness or negligence in any way. The railroad company will not expect, and will not hold itself liable for any damage that may occur to property of this kind, whether by negligence of the company, its employees, or otherwise, when no charges are made for transporting it.

"All dogs being carried over the road in baggage car, other than as heretofore described, will be charged for as follows: For whole length of road, \$1; for whole length of each division, 50 cents, and 25 cents for any part thereof, and that charge shall belong to the baggage master, who will be held responsible for any damage that may occur to the animal through his own carelessness."

#### OLD AND NEW ROADS.

##### New York & Long Branch.

Work is progressing steadily south of the Raritan River and the grading parties have reached a point near Branchport, where they are at work on a long cutting. The grading beyond that point is very light.

##### Chagrin Falls & Solon.

Arrangements are being made to build a branch road about five miles long from Chagrin Falls, O., southwest to the Cleveland & Mahoning Valley at Solon.

##### New Jersey & New York.

The new equipment of the road is being rapidly supplied to it. The road remains for the present of six-foot gauge, and probably no change will be made until another connection with Jersey City than the Erie is secured. The engines are, however, so built that they can be changed from six feet to standard gauge with as little trouble as possible, by merely substituting shorter axles, drawing in the frames and changing the boiler braces. The cars are made with bodies of suitable width for standard gauge and mounted on six-foot gauge trucks.

##### Cumberland & Beverley.

This company has filed its certificate of incorporation with the Secretary of State of Ohio. The capital stock is to be \$300,000 and the road is to run from Cumberland, in Guernsey County, south by east to Beverley, in Washington County, a distance of about 20 miles. Cumberland is the terminus of the Cumberland & Point Pleasant Branch of the Marietta, Pittsburgh & Cleveland, and the projected road will be an extension of that branch.

##### New Orleans, Mobile & Texas.

The Louisiana Superior Court has decided that the act of the Legislature authorizing the issue of \$2,500,000 State bonds in aid of the construction of the branch from Vermilionville to Soreveport is unconstitutional and void, the constitutional limit of the State debt having been exceeded. Moreover, the company has never complied with the terms of the grant, and would consequently have forfeited it, even if the law had been valid.

##### Northern Central.

In the suit brought by the State of Maryland in the Baltimore superior Court to enforce the collection of the tax on gross earnings imposed by the acts of 1872 and 1874, a decision has been reached. The opinion of the Court, which is very carefully elaborated, is that the State had a right to grant exemption from taxation in the first place; that the exemption once granted it could not be repealed, being in the nature of a contract between the State and the company; that by the wording and manifest intent of the act authorizing the consolidation of the Baltimore & Susquehanna Company with others to form the Northern Central, all the rights and franchises granted to the original corporation, including the exemption from taxation, passed to the new company; that the tax, though indirect, is really just as much a tax on the stock as one levied directly would be; finally that the act is void, being in contravention of a provision of the State constitution which declares that taxes shall be assessed equally upon all persons according to property. The tax in question is a special tax on certain personal property which is not imposed on the general personal property of the State. Judgment is therefore given against the State, and the tax cannot be collected. It is not reported whether any appeal will be taken.

At the regular monthly meeting of the board in Baltimore, January 23, it was resolved to remove the car shops from York, Pa., to Baltimore, where they will be located at Mount Vernon, where the other shops now are. It was also ordered that plans be prepared for a new building for the general offices, to be located on the company's property on the corner of Calvert and Center streets, Baltimore, and for the improvement of the Calvert street depot. The board also discussed the questions of building steamship piers at Canton and a coffee-store-house on Jackson's wharf. A proposition from a Buffalo company to erect a large elevator at Canton, on condition of receiving the exclusive privilege of handling all grain brought over the road, was declined, as the Committee on Terminal Facilities was instructed to prepare plans for the building of an elevator to be owned or controlled by the company.

Subsequently a conference was held with the officers of the Canton Company with reference to the more extended use of the Union Railroad and the terminal facilities already provided at Canton and their further extension and improvement.

##### Lake Superior & Mississippi.

The Minnesota Supreme Court is hearing new arguments in the case in which this company's charter was declared unconstitutional and void.

##### Great Southern.

A very doubtful-looking financial scheme is advertised by E. Haas & Co., agents of this company. It is proposed to issue "first-mortgage land grant and premium bonds," each bond to be of the denomination of \$10. Six times in each year there will be a sort of lottery drawing by which a number of bonds will be selected for redemption, each bond so drawn receiving a premium of from \$1 to \$50,000 besides its face value.

The road is intended to run from Jesup, Ga., the crossing of the Atlantic & Gulf and Macon & Brunswick roads, south to

Jacksonville, Fla., and thence south through the Florida peninsula to its southern extremity. On the northern section there is a poor country and a very thin population, while on the southern portion there is no population at all, the country being almost absolutely a wilderness. If the road should ever be built, it is not probable that it will have any traffic to speak of.

##### Peach Bottom.

The Superintendent informs us that the Eastern Division of this road is 16 miles long, instead of 13, as we have reported it heretofore. In 1873 six miles were constructed, instead of four, as we reported, and in 1874 ten instead of nine. The line extends from Oxford, Pa., west by north to Goshen. The entire 22 miles of the Western Division was complete in 1874.

##### Chicago & Pacific.

The Engineer informs us that the track was laid to Genoa, Ill., Dec. 31, and during January was extended 9.6 miles westward to a point 67.9 miles from Chicago. He writes: "The necessary side tracks are in, and back spiking of main track completed. We expect to reach Rock River with the iron on or about March 1, (86.8 miles from Chicago). We are keeping a full force of tracklayers and spikers at the front, and the track is in very good condition."

##### Western of Alabama.

A special meeting of the directors of the Georgia Railroad Company was held in Augusta recently to receive the report of a committee on the affairs of this road, on whose bonds the Georgia is an endorser. The matter was referred back to the committee, with instructions to confer with the directors of the Central of Georgia with regard to united action in taking charge of the affairs of the road and also to see what arrangement can be made with the first-mortgage bondholders. It is thought that the Georgia and Central companies will take possession of the road.

##### Elizabeth, Lexington & Big Sandy.

The Fayette County (Ky.) Circuit Court has issued an injunction prohibiting the company from issuing, selling or otherwise disposing of any of the bonds of the company. Also from releasing or surrendering any subscription to the stock and from pledging or mortgaging any property or franchises of the company. The officers are permitted to incur debts necessary for the operations of the road, and to make and collect calls on the stock.

##### Valley, of Virginia.

The company has made a formal demand on the city of Staunton, Va., for the payment of the balance of the \$25,000 bonds due on the city subscription of \$100,000. Failing the delivery, a mandamus will be applied for. The City Council voted not to deliver the bonds.

The Valley stockholders seem to be united in the hope of securing further subscriptions from Baltimore and delaying the payment of their own. It is not probable, however, that the Baltimore subscription of \$1,000,000 will be increased, and the chances are that work will be stopped for some time.

##### Columbus, Chicago & Indiana Central.

The complaint in the Haessler suit, brought to enforce the guarantee of interest on the second-mortgage bonds by the lessee, is very long and rehearses the charges formerly made as to the irregularity of the manner in which the lease was so changed as to remove the guarantee from the second-mortgage bonds. It also alleges the illegality of the change in the lease, and asks for relief. It also asks for an injunction to restrain the Pennsylvania Railroad Company from beginning proceedings in foreclosure.

##### Cairo & St. Louis.

The tracklayers on the north end of the road have reached a point 20 miles south of the old terminus at Murphysboro, Ill., which brings them nearly to Jonesboro. The tracks on the north and south ends of the road were expected to meet this week.

##### St. Louis, Lawrence & Western.

The Lawrence (Kan.) Journal says that Mr. J. M. Webster has sold out his interest in the road to Judge J. P. Usher, the President, and has retired from the management of the road.

##### Lake Shore & Tuscarawas Valley.

This road was sold in Cleveland, O., January 27, under foreclosure of the second mortgage. It was bought by Selah Chamberlain, of Cleveland, for \$1,000,000. The road is 101 miles long, from Black River, O., south by east to Uhrichsville, and it was sold subject to first mortgages of \$2,180,000.

The purchaser announces that it will be operated hereafter under the name of the Cleveland, Tuscarawas Valley & Wheeling Railroad, with general offices in Cleveland, O.

##### New York & Oswego Midland.

The tax collector at Delhi, N. Y., recently seized and held a train for unpaid taxes, but after a long detention it was allowed to proceed.

In the United States Circuit Court in New York, January 29, the receivers applied to the Court for instructions as to ceasing to operate the road. They represent that all their efforts to keep up the road have been frustrated by the constant seizures of property and freight for taxes, which alarmed and drove away the patrons of the road.

Judge Blatchford thought it would be very unwise to stop operations until every effort for relief had been exhausted, saying that a stoppage would be an incentive to the employees to renewed acts of violence. He will consider the matter, and unless legislative aid be shortly given will endeavor to devise some plan to help the receivers out of their difficulties.

The repeal of the law which repealed the exemption from taxation continues to be debated in the Legislature, but the weight of authority is evidently against its constitutionality, and it probably will not pass.

##### Louisville, New Albany & St. Louis.

It is reported that a combination is being formed for the purpose of completing this road from New Albany, Ind., west to Huntington in Dubois County, where it will connect with the Cincinnati, Rockport & Southwestern.

##### New London Northern.

There was a conference held in Springfield, Mass., last week, between officers of this company and gentlemen from Springfield with regard to the building of the proposed line from the New London Northern at Stafford Springs to Springfield. The Engineer reported that the line surveyed was about 20 miles long and that it could be built cheaply and with moderate grades. The company is willing to build to the State line, seven miles, or further if it is thought equitable.

##### Baltimore & Ohio.

The freight depot at Winchester, Va., on the Valley Branch, was destroyed by fire very early on the morning of January 27, together with a passenger train which stood on a siding near by. The building was of wood and not very valuable.

##### Missouri, Iowa & Nebraska.

In the Supreme Court of the United States recently, a decision was made in the case of *Ochiltree vs. The Iowa Railroad Cont. acting Company*, on appeal from the Supreme Court of Missouri. The Iowa Company became stockholders in the Missouri, Iowa & Nebraska Company, after the repeal of the double liability clause of the Missouri constitution, and the question was whether under these circumstances it was liable

under that clause for debts by the corporation prior to the repeal. The decision is in the negative, and the judgment is affirmed.

##### Waterville & Hanover.

This company has completed its organization and filed the necessary papers with the Secretary of State of Kansas. The road will be about 15 miles long from Waterville, Kan., the terminus of the Central Branch, northwest to Hanover on the St. Joseph & Denver City.

##### St. Louis, Iron Mountain & Southern.

This company is prosecuting a claim against the State of Missouri for \$40,458 and accrued interest. The law of 1868 applied the unpaid balance due the State on the purchase of the St. Louis & Iron Mountain road, with the interest accruing thereon to the construction of the Arkansas Branch from Pilot Knob to the Arkansas Line. The company built the road, but in the meantime had paid \$40,458 interest, which the State officers refused to refund, and which the company now seeks to recover.

##### Illinois Midland.

This company now runs two through express trains daily between Peoria and Indianapolis, besides one express which is run in connection with the Chicago & Alton between Peori and Springfield.

##### Meetings.

The following companies will hold their annual meetings at the times and places given:

Delaware, Lackawanna & Western, at the company's office, No. 26 Exchange place, New York, February 23, at 12 noon. Transfer books are closed from February 3 until February 24.

Consolidation Coal Company, at the company's office, No. 71 Broadway, New York, February 17, at 12 noon.

Marietta & Cincinnati, in Cincinnati, O., February 17.

Shenango & Allegheny (adjourned), in Meadville, Pa., February 12.

Pennsylvania Petroleum, in Meadville, Pa., February 12.

##### Southern Maryland.

This road is asking Congress to authorize the guarantee of its bonds by Government to the amount of \$30,000 per mile. The plea is that in time of war the road would give rapid communication between Washington and Fort Monroe and Norfolk.

##### Indianapolis, Bloomington & Western.

The banking house of Duncan Sherman & Co., in New York, have been requested by a number of English holders of bonds to represent their interests, and take such action as may be necessary for their protection.

##### Reading & Lehigh.

Negotiations are pending for an arrangement under which the trains of this road will run to and from the Philadelphia & Reading depot in Reading, thus breaking altogether the connection with the Wilmington & Reading.

##### Dividends.

Dividends have been declared by the following companies: Connecticut & Passumpsic Rivers, 3 per cent., semi-annual, payable February 1.

Massachusetts Valley (leased by Connecticut & Passumpsic Rivers) 3 per cent., semi-annual, payable February 1.

Cedar Rapids & Missouri River (leased by Chicago & Northwestern), 3½ per cent., semi-annual, on the preferred, and 1 per cent., quarterly, on the common stock, both payable February 1.

##### Chicago, Rock Island & Pacific.

This company gives notice that a number of coupon tickets have been stolen from its Twenty-second street office in Chicago. Officers of railroads are requested to instruct their conductors to take up any of the tickets mentioned, with the name and address of the party presenting it. The tickets stolen were from Chicago to Grand Island, Neb., Chicago to Stockton, Cal., Chicago to Golden City, Col., and Chicago to Harrisburg, Oregon.

##### Columbia Conduit Company.

Early on the morning of February 1 this company gathered a force of men and relaid its pipe line past the West Pennsylvania crossing at Powers' Run, where it was torn up some time since. It is not known yet what action the Pennsylvania Railroad will take.

##### New Jersey West Line.

It is reported that negotiations are pending for the sale of this road to the Central of New Jersey, and that, if the transfer is made, it will at once be completed to a connection with the Central's Newark & New York Branch in or near Newark. Such a thing is possible, but does not seem very probable.

##### Memphis & Little Rock.

The machine, car, blacksmith and pattern shops at Argenta, opposite Little Rock, Ark., caught fire on the morning of January 30, and were burned to the ground. The loss is stated at \$30,000, and there is no insurance.

##### Great Western of Canada.

The cars of the North Shore Line, which have heretofore run over the main line to Suspension Bridge, will hereafter pass over the Air Line from Glencoe to the International Bridge, and will be transferred to the Erie at Buffalo instead of Suspension Bridge.

##### Rhinebeck & Connecticut.

Negotiations are pending for a connection with the New York Central & Hudson River at Rhinecliff, and the building of a union depot there. The company has ordered 100 freight cars for use on the road.

##### Louisville, Cincinnati & Lexington.

The Receiver having submitted a report to the Chancery Court, exception is taken to certain recommendations made on behalf of the city of Louisville, the city claiming that the company has not fulfilled its contract. The Newport & Cincinnati Bridge Company asks to come in as a preferred creditor, to be paid out of money in the Receiver's hands \$29,200 due for use of bridge, and the Pittsburgh, Cincinnati & St. Louis also asks immediate payment of \$54,056, rent of depot grounds in Cincinnati.

##### Southern Pacific.

There is much discussion in California over the bill now before Congress allowing this company to change the route of its main line so as to run through the San Geronio Pass in San Bernardino County, instead of the Tehachapi Pass in Kern County. The bill also allows the road to cross the Sierra Madre at the Cajon Pass, instead of at San Fernando on the line already located and partly built. The proposed change would leave Los Angeles at the end of a branch, instead of putting it on the main line, and would lengthen somewhat the line between Los Angeles and San Francisco. Moreover, it would probably prevent or at least delay, the building of the Los Angeles & Independence road, the only practicable route for which is through the Cajon Pass, through which defile, it is said, there is not room for two roads. The motive of the Southern Pacific in seeking the change is said to be the desire to secure the traffic of the mining region of Inyo County, which is already large and is rapidly growing. Most of this business now goes to Los Angeles, and all of it would probably take that route if the In-



dependence road were built. The company's contract with Los Angeles requires that railroad communication between that city and San Francisco shall be completed by Nov. 11, 1877, but does not, we believe, require that it should be by the main line.

#### United States Rolling Stock Company.

This company has determined to remove its property from the Atlantic & Great Western road, despairing of being able to effect a settlement of the rental, and has built extensive sidings at Mansfield, O., where the cars and engines will be stored. There are about 1,300 cars to be collected and brought there.

#### Illinois Railroad Law.

The suits brought against the Illinois Central at Cairo to recover penalty for extortion and unjust discrimination were settled in court January 28 by a compromise. The extortion counts were dismissed, and judgment for \$1,000 rendered on one of the discrimination counts. There are cases pending in the United States which will settle the validity of the contested points of law.

#### Hannibal & St. Joseph.

A dispatch from Hannibal, Mo., says: "Mr. L. W. Towne, General Superintendent, has been suspended by a telegraphic order from the Executive Committee of the Board of Directors at New York, and ordered to turn over books, papers, etc., to P. W. Drew, Assistant Superintendent. Mr. Towne is an old citizen here, universally esteemed, and his suspension is generally regretted. Disagreement as to the policy in the management of the road is understood to be the cause of the removal."

There are many rumors of trouble among the directors, and even of doubtful practices, to which Mr. Towne refused to be a party.

#### Canadian Bridge Company.

The Toronto (Ont.) *Monetary Times* says: "The scheme of building a new bridge over the river St. Lawrence via St. Helens Island is about to assume a tangible form. Notice is given of application to the Dominion and local legislatures for acts of incorporation, and it is stated that the following persons will form part of a company to carry out the work: Sir Hugh Allan, President of the Northern Colonization Railway Company; P. H. Moore, President of the Montreal & Vermont Junction; A. B. Jewett, representing the Vermont Division of the Portland & Ogdensburg; W. Brigham, President of the Lamotte Valley; S. J. Anderson, President of the Portland & Ogdensburg; S. C. Willet, President of the Montreal, Champlain & Sorel; J. H. Pangman, President of the Laurentian Railway; Hon. John Young, Mayor of Montreal; Henry Mulholland, P. S. Murphy, J. B. Beaudry and E. L. De Bellefeuille. The bridge is to be hung between two towers of sufficient height to allow vessels to pass underneath, and will be large enough to afford accommodation for the traffic of all the new railways centering in Montreal, and likewise have carriage and footways."

#### Georgia Railroad Taxation.

The State Comptroller has issued warrants under the decision of the Circuit Court against the following companies for the collection of taxes: Central, Georgia, Western & Atlantic, Augusta & Savannah, Atlantic & Gulf, Southwestern, Savannah, Griffin & North Alabama, Atlanta & West Point, Savannah Branch and Alabama & Chattanooga. The total amount of these warrants is \$165,770. Suits are still pending against the Selma, Rome & Dalton, Savannah & Charleston, Rome, Atlanta & Richmond Air Line and Brunswick & Albany companies.

#### Manchester & Keene.

The town of Marlborough, N. H., has voted to abide by the previous resolution appropriating a tax of 5 per cent. as a gratuity for this road provided it is built on the line already surveyed which runs south of the village.

#### The Cincinnati Southern Bids for Rails.

In Cincinnati, February 1, the trustees opened the bids submitted for the 25,000 tons of iron and 22,000 tons of steel rails called for. The prices per ton at which the iron rails were bid for were as follows:

Marietta (O.) Coal & Iron Company	\$48 00 to \$56 00
Cambria Iron Company, Johnstown, Pa.	48 50 to —
Cleveland Rolling Mill Company	52 75 to 60 00
J. G. Kyle & Brother, Cincinnati Rolling Mill	54 00 to 60 00
North Chicago Rolling Mill Company	54 75 to —
T. Bragdon & Co., New Albany, Ind.	55 75 to —
Milwaukee Iron Company	55 75 to —
Chattanooga Iron Company	56 00 to —
Springfield (Ill.) Iron Company	56 75 to 57 95
Cleveland Iron Company	57 00 to 60 00
Waterman & Beaver, Philadelphia	58 00 to —
Wick, Ridgeway & Co., Youngstown, O.	59 00 to —
Columbus (O.) Rolling Mill Company	61 00 to 62 60

The bids for the steel rails and the prices per ton were as follows:

Cambria Iron Company, Johnstown, Pa.	\$72 00 to \$74 00
Cleveland Rolling Mill Company	76 75 to —
A. B. Meeker & Co., Chicago	77 00 to —
Naylor & Co., New York	79 00 to —
T. W. Yardley, Agent, Cincinnati	80 00 to —
W. Bailey Lang & Co., New York	81 80 to —
Edgar Thomson Steel Works, Pittsburgh	82 00 to —

The bids are being examined, and some time will probably elapse before any decision is made.

#### Toledo, Wabash & Western.

A circular has been issued with a proposal to the bondholders and creditors of the company for funding their claims. Balances due for wages and current supplies are not included. The proposition is as follows:

1. The holders of the first-mortgage bonds on the main line shall be asked to fund one year's coupons in funding certificates bearing 7 per cent. interest. The principal payable at the pleasure of the company after three years and not longer than six years.
2. The holders of Decatur & East St. Louis bonds shall be asked to fund one and one-half years' coupons in similar certificates.
3. All other bondholders shall be asked to fund two years' coupons in funding certificates bearing 7 per cent. interest. The principal payable at the pleasure of the company after five years and not longer than ten years.
4. Holders of the bonds of all the leased lines shall be asked to fund two years' coupons, in similar funding certificates, payable at the pleasure of the several companies, after five years and not longer than ten years. Said certificates to be guaranteed by the Toledo, Wabash & Western Railway Company by special endorsement.
5. All coupons payable in gold to be funded in certificates, payable, principal and interest, in gold.
6. The holders of floating debt (not including those heretofore excepted) shall be asked to extend their debt 12, 15 and 18 months, interest payable semi-annually; the principal to be paid sooner if the company is able.
7. All the above propositions to be offered on conditions that majorities of each interest before named (or sufficient to prevent a foreclosure) shall agree.
8. That a sinking fund of 5 per cent. per annum on the total amount of each class of funding certificates is hereby pledged to be paid to the Metropolitan Bank of New York, for the purchase of certificates, by advertisement, to the lowest bidder. The first sinking fund payment to be made on or before January 1, 1876.

Holders of bonds are invited to call at the company's office,

No. 13 William street, New York, for all information. So soon as a sufficient amount is agreed to be funded to make the whole scheme binding, due notice will be given, when the entire details will be carried out by the company, at its office, and the surrendered coupons shall be deposited in the Metropolitan National Bank.

The directors believe that the earnings of the road will increase with the general improvement of business, and that the property may be relieved of its embarrassments and saved to the stockholders.

A call to certain classes of bondholders to join in action for the protection of their rights has already been issued.

#### Vermont & Canada.

The Vermont Chancery Court has granted the petition of the Central Vermont and has ordered that that company have leave to purchase the Vermont & Canada road and property, subject to all liens, claims, equities and liabilities in favor of third parties to which the property so to be conveyed may now be liable.

The Vermont & Canada directors declined, on their part, to submit the question to the court, and it remains to be seen whether they will proceed further with the contract of sale.

#### Chicago, Burlington & Quincy.

The United States Circuit Court some time since granted an injunction restraining the county officers from collecting the taxes levied upon this company's property. This injunction has been modified so as to allow county clerks to enter the taxes on the books. It is continued in force against the collectors.

#### Philadelphia & Reading.

Plans have been prepared and submitted to the Philadelphia City Council for obviating the difficulties now occurring as to street crossings in the city. The plans require the building of a new depot for the main line west of Broad street and the abandonment of some of the present tracks. For the Germantown & Norristown line it is proposed to build an elevated road from Germantown Junction to Spring Garden street, and a new depot on Spring Garden and Ninth streets.

The company is about to try the experiment of cheap trains on the Germantown Branch, where there is a very large suburban traffic. These trains will be run into Philadelphia before 7 o'clock in the morning and out after 6 o'clock in the evening. The fare between Philadelphia and Germantown—seven miles—will be 10 cents, and that to other points in proportion. These cheap tickets will be good only on the special trains.

#### St. Louis & Southeastern.

Wertheim & Gompertz and F. W. Oewel, have issued an announcement, dated Amsterdam, January, 1875, addressed to the holders of the issue of \$2,250,000 of Oct. 1, 1869, on the Illinois Division, that of \$1,000,000 dated March 1, 1871, on the Evansville Division, and the consolidated first mortgage of \$9,500,000 of Oct. 1, 1872, in which they say:

"Since the administration of American Railroad Securities conducted an investigation in the interest securities of the above company under its management, on many sides both here in Holland and also in Germany the wish has been expressed that we should undertake the protection of the right of the bondholders in general with regard to the company. When the necessity and advantage of a settlement of so important an affair became known, we resolved to undertake this task since in this matter we could count on the assistance of Messrs. Rutten & Bonn, of New York, as our bankers. Mr. L. H. Meyer and Mr. H. W. Smithers, of New York, who have already during the past six months informed themselves as far as possible of the details affecting this company, likewise declared themselves ready to lend their co-operation to our efforts, and to undertake such measures as may seem requisite in the interests of the bondholders."

For this they said a general and immediate union of the securities in their hands was necessary, and holders were invited to deposit them with certain parties in Amsterdam or Frankfurt. They add that whether they settle the claims of the bondholders by litigation or by negotiation, they will in no case recognize any part of the floating debt which the law does not compel them to, and that the different classes of bonds will have their claims recognized according to their legal priority; that the first division mortgages have an undoubted priority and that the consolidated is subject to them.

The Kentucky Circuit Court has appointed Mr. H. H. Shouse Receiver of the road in Kentucky, the old Evansville, Henderson & Nashville. It is already in the hands of St. John Boyle, who was appointed Receiver by the United States Court, and it is not likely that he will give up possession.

#### Lake Shore & Michigan Southern.

Judge Tappan of the New York Supreme Court has dissolved the preliminary injunction against the payment of the dividend recently declared, which was obtained by Mr. Jacob Rubino. The Court holds that the weight of evidence in favor of the defendant's statement shows that the payments required by the consolidated mortgage had been duly made. The power of the directors to declare a dividend is not questioned and its declaration does not come within the case of a breach of trust arising from the misapplication or waste of funds. The rights of the other stockholders should be considered, and in equity the plaintiff is bound to make at least a *prima facie* case, which he has failed to do. The injunction is therefore dissolved, though plaintiff's right to bring the action is not denied.

#### Longwood Valley.

It is stated that this road has been sold to the Central Railroad of New Jersey and that that company will proceed at once to complete the road and will work it as a branch. The road is intended to run from the Central at Clinton, N. J., northeast to Newfoundland, 35 miles. Some grading has been done on the southwestern end. It will serve a large iron mining district.

#### Chicago & Southern.

In the chancery suit recently begun by B. Lowenthal, a bondholder, against the Chicago, Danville & Vincennes and Chicago & Southern, John B. Brown, the contractor for the latter road, has appeared and asked to be allowed to file a cross bill for the recovery of the balance of \$50,000 due him on his contract.

#### California Pacific.

Arrangements are being made to build a branch from Vacaville, Cal., north to Winter's Ranch, in Yolo County, 12 miles. Nearly all the necessary stock has been subscribed, and the depot grounds and much of the right of way will be given.

#### Chesapeake & Ohio.

The employees on the road, who have been lately paid in scrip, will be paid in money after February 1.

#### Easton & Amboy.

The report of Mr. Robert H. Sayre, Chief Engineer of the Lehigh Valley road, speaks of the condition of this road at the close of the year, November 30, as follows:

"The work on the Easton & Amboy Railroad is drawing to a close, there being but 1.4 miles yet unfinished to complete the grading. Of the entire distance 43.1 miles has been graded for double track, and much of the remaining distance will be widened for two tracks before the opening of the road. A distance of 3,500 feet at the east end of the tunnel will be graded for four tracks with material from the tunnel. The work yet

remaining to be done to complete the tunnel is 156 feet lineal of heading, 1,279 feet lineal of enlargement, 200 feet lineal of arching, at the west end in soft ground, and about 275 feet of arching in loose rock; 2,540 feet of heading have been driven in the past year, showing great energy on the part of the contractor.

"To complete the grading of the whole road for double track will require the removal of about 440,000 cubic yards. This does not include any tunnel excavation, of which there yet remains about 15,000 cubic yards.

"All the important bridges on the line are completed. They are first-class structures, built by Kellogg & Maurice, Keystone Bridge Company, Phillipsburg Manufacturing Company, and Charles Macdonald. There are yet remaining to put up 11 small bridges, varying in span from 13 to 35 feet. These are being built at our South Easton shops, and are nearly ready for erection. There will be between Phillipsburg and Perth Amboy 39 iron bridges and girders, in spans of from 11 to 172 feet, making a total of 3,647 lineal feet of double-track bridge superstructure.

"The work at Perth Amboy is well under way. One coal pier, with the connecting trestling, is done, except laying the tracks and putting in the iron snouts. The second one will be in similar condition by March 1, 1875. A third pier for general freight built precisely like the others, except the trestling and snouts, is nearly completed; this has been so arranged as to be convertible into a coal pier at any time it may become necessary, by the erection of trestling, etc., on it. The timber and piles for all the work contemplated are now on hand. The dredging of the canals between the piers is about half done.

"All the material for the main track and 40 miles of second track has been contracted for and is now in process of delivery. About 40 miles of single track and four miles of sidings have been laid, most of which has been ballasted with gravel. Track-laying will be pushed through the winter, so that by the opening of spring and the completion of the tunnel, we may begin to reap some benefit from the large outlay made."

Up to the date of the report (November 30) there had been expended for:

Construction, bridging and track	\$4,647,376 88
Right of way	940,437 56
Perth Amboy real estate and coal wharves	556,027 21
Real estate, taxes and sundry other items	58,827 10
Total	\$6,202,668 75

#### Mexican Central.

Mexican papers say that the survey for this road, from Mexico northward to Leon, has been begun under Mr. George A. Foote, who is Engineer of the "Mexican Railway," from Vera Cruz to Mexico.

#### The Pennsylvania General Pipe Line Law.

An act has been introduced in the Pennsylvania Legislature to extend the provisions of the general law authorizing the formation of mining and manufacturing corporations to companies formed for the transportation of oil and gas by pipe lines. The act is general in its terms, but its real object is to enable the extension of a pipe line from the oil regions through to Pittsburgh. This has been attempted by the Columbia Conduit Company, but its line was broken by the Pennsylvania Railroad Company, and the courts refused to sustain the Conduit Company, as there were grave doubts as to the legality of its organization. There will no doubt be a strong opposition to the law, as its passage, it is thought, would seriously injure the oil business of the railroads north of Pittsburgh.

#### Springfield & Northwestern.

On application of the bondholders the United States Circuit Court has appointed Mr. George J. Black, of Springfield, Ill., Receiver of this road. The road is 47 miles long, from Springfield, Ill., northwest to Havana on the Illinois River. A part of the road has been in operation for over a year, but the last section of 11 miles from Central to Springfield was only completed some two months since.

#### New York Central & Hudson River.

A reduction of 10 per cent. in the wages of the track hands was made February 1, which brings the ordinary hands down to \$1.12 1/2 per day. A similar reduction had been ordered in the wages of the engineers and firemen on the whole line, which caused much excitement among the men. Meetings were held and a committee appointed to wait upon President Vanderbilt. After much discussion an agreement was finally come to on a compromise basis which involves a certain reduction. The pay of engineers will hereafter be 9 1/2 cents per mile for actual mileage run, and all pay for shop days, lay-over days and for Sundays when not actually at work will be abolished.

#### Delaware & Hudson Canal.

This company received, January 29, proposals for \$2,000,000 of its 7 per cent. currency bonds due in 1894. The whole amount was awarded to the banking houses of Morton, Bliss & Co. and L. Von Hoffman & Co., at 101.11 and accrued interest. There were two other bids for the whole amount, one of 101.9 and the other of 101 and accrued interest.

#### Shenango & Allegheny.

This road, like the Cleveland & Mahoning Valley, was leased by the Atlantic & Great Western, and its stock is in the hands of the trustees of that company's "leased line rental trust bonds." The lessee having failed to pay the rental, the trustees are about to begin proceedings to enforce the payment or to obtain possession of the road.

#### Auction Sales of Railroad Securities.

At a large sale of securities in New York, January 27, the following prices were obtained: Hannibal & St. Joseph common stock, 21 1/4; preferred, 30 3/4; 8 per cent. bonds, 82 1/2 to 83 1/4; Central of New Jersey stock, 107 1/4; South Branch stock, (road leased to Central of New Jersey), 75 to 80; Warren Railroad stock (road leased to Delaware, Lackawanna & Western), 92 1/4; Paterson & Ramapo stock (road leased to the Erie), 93; Third Avenue (street) Railroad stock, 152; Delaware & Hudson Canal Company's 7 per cent. registered bonds, 98 1/4; Keokuk & Hamilton Bridge bonds, guaranteed by Toledo, Wabash & Western, Toledo, Peoria & Warsaw and Columbus, Chicago & Indiana Central, 70; Lafayette, Muncie & Bloomington first-mortgage, 56; Lafayette, Bloomington & Mississippi first-mortgage, 56 1/4; both the latter have the guarantee of the Toledo, Wabash & Western; Burlington, Cedar Rapids & Minnesota first-mortgage, Milwaukee Division, 20; New York & Oswego Midland first-mortgage, 25; Bleeker Street & Fulton Ferry (street) Railroad stock, 10 1/4; Boston, Hartford & Erie, \$20,000 of stock sold for \$44; Avenue C (street) Railroad, \$10,700 stock sold for \$20.

#### Illinois Central.

An advance sheet has been issued containing a part of the annual report of the directors, which is as follows:

The company's obligation to set aside the proceeds of the land sales to the payment of the construction bonds has been fulfilled. From the receipts of the last year \$367,856.47 was applied to the payment of the balance of bonds not previously provided for in sinking fund. The proceeds of 299,065 acres of land on hand, and \$1,007,509.78 of notes receivable for lands sold, will pass, as realized, to the general account.

Recently an important decision of the Supreme Court of Illinois has confirmed the company's action regarding the disposal of its lands, and has set at rest questions adverse to its



interests which had arisen in the State Legislature. The Land Office in 1874 collected \$408,670.89, its expenses were \$40,814.42, leaving \$367,856.47, and \$4,173.33 acres of land were sold for \$267,652.33. At the end of the year 1874, 409.59 acres were under contract with \$1,007,509.78 due thereupon to the company, and 299,065.85 acres of the original grant were on hand for sale.

A general mortgage has been placed upon the railway, limited at \$15,000,000. It secures the \$958,400 (\$4,792,000) 5 per cent. bonds, and also provides for the \$5,000,000 6 per cent. bonds. For the additional \$5,000,000 permitted under the mortgage, there is no immediate requirement.

The directors announce a more satisfactory net result from the traffic in 1874 than for several years previous. The interest on the debt and dividends of 8 per cent on the shares has been derived from the traffic. The net traffic was \$2,775,327.78; balance interest account, \$413,610.20; dividends, \$2,165,533.79; leaving to credit of income account, \$196,218.79.

This concludes the first year of working freight south by rail from Cairo. The experiment has been successful, although, owing to political troubles in the South, the volume of business has not been so large as in previous years. The bulk of the freight from Cairo is directed by rail, and is leaving the river. The Southern lines are scantily supplied with rolling stock. The business was interrupted by the freshet in the spring, and generally impeded by the incomplete condition of the Southern railways. In spite of these drawbacks, the traffic is remunerative and gains ground. Cairo is now the center of an established trade to and from the South, chiefly tributary to our line, which is more direct than any other. The advantage of this rail communication over that by river has been so marked that the future of the New Orleans line seems well assured. The parties interested will, without doubt, during the year obtain the means to discharge their obligations, and equip the line in some measure corresponding to the traffic furnished it by this new Northern connection.

The payment of the redemption bonds which mature April 1 has been provided for by the sale of \$500,000 (\$500,000) of twenty year bonds bearing the same interest of 6 per cent. Five thousand tons more of steel rails have been purchased, making 10,000 tons to be laid in the spring.

The Board has the satisfaction to report a contract for the use of our depot grounds and track by the Baltimore & Ohio Railroad Company, entering on our line 10½ miles south of Chicago.

The working stock of supplies, including 5,000 tons of steel rails on hand the 31st December, was \$1,117,892.91. The cash assets \$1,940,574.53.

The debt of this company on the 1st April next will be \$2,500,000 6 per cent. currency bonds due in 1890, \$500,000 (\$2,500,000) 6 per cent. sterling bonds due in 1895, and \$958,400 (\$4,792,000) 5 per cent. bonds due in 1903; and it holds \$4,842,000 of New Orleans, St. Louis & Chicago bonds to offset the 5 per cent. The amount of share capital and 6 per cent. debt is \$34,000,000. At the close of 1874 the sum of the share capital and debt was \$34,209,110. Meanwhile \$6,489,880 has been added to the property in outlays on the road and plant.

The general balance sheet, which is appended, is as follows:

Permanent expenditures, Illinois.....	\$36,856,432 02	
" " Iowa.....	308,858 65	
Working stock of supplies.....	\$707,344 49	\$36,165,290 67
Steel rails on hand.....	410,548 42	
New Orleans Line 7 per cent. gold bonds in sinking fund.....		1,117,892 91
Cash assets.....		4,842,000 00
Miscellaneous assets.....		1,940,574 53
Total.....		\$44,511,826 91
Capital stock.....		\$29,000,000 00
Construction bonds due April 1, 1875.....	\$2,735,000	
Construction bond fund.....	2,735,000	
Sterling 6 per cent. redemption bonds due April 1, 1875.....	\$2,500,000	
Current 6 per cent. redemption bonds due April 1, 1890.....	2,500,000	5,000,000 00
Sterling 5 per cent. bonds issued in exchange for bonds of New Orleans Line.....	\$4,792,000	
Less redeemed by sinking fund in 1874.....	50,000	
Surplus.....		4,842,000 00
Surplus income of 1874.....		5,473,608 12
Total.....		\$44,511,826 91

The surplus reported is exclusive of 299,065.85 acres of land unsold, and \$1,007,509.78 land notes.

#### Chicago, Rock Island & Pacific.

Notice is given that on and after February 1, 1875, this company will charge one cent per mile, loaded or empty, for the use of their cars, and the same will be paid to other roads and lines. The price heretofore has been 1½ cents per mile. This reduction in the rate for car mileage seems to be general, and probably has been or will shortly be made by all the leading companies.

It is said that the bonds of this company having reached a price above that at which the company has the right by the terms of the bonds to call them in, arrangements are making to call in a considerable part of the bonds for the sinking fund so as to stop the interest on the same.

#### Logansport, Crawfordville & Southwestern.

Much complaint is made by coal operators along the line of the difficulty of getting empty cars for their coal and of getting cars carried away from their sidings after they are loaded. A number of the creditors have filed a petition in the United States Circuit Court at Indianapolis for the removal of Spencer D. Schuyler, the present Receiver. The petitioners allege that Schuyler is running the road in his own interest, especially so in the matter of transporting coal over that line from some mines in which he is largely interested. The petition was argued before the Court January 27. The Court, at the close of the argument, dismissed the petition.

#### Wisconsin Central.

The express to Menasha and Green Bay, which formerly left Milwaukee at 3:10, now leaves at 1:30 p. m., reaching Menasha at 7:10 instead of 8:20 as heretofore; at Green Bay at 7:50 instead of 8:55. The passenger train formerly leaving the upper end of the road at Worcester at 6:45 a. m., now leaves that place at 5:30, and Stevens Point at 5:15 p. m., reaching Milwaukee at 6:45 a. m.

#### Illinois & St. Louis Bridge.

The trustees under the first mortgage give notice that under the provisions of the mortgage relating to the sinking fund they have drawn for redemption 58 bonds numbered as follows: 91, 93, 107, 141, 220, 254, 256, 356, 437, 512, 533, 549, 639, 701, 739, 756, 962, 1034, 1042, 1177, 1282, 1397, 1578, 1526, 1575, 1678, 1729, 1965, 1907, 1930, 1953, 2017, 2252, 2309, 2349, 2365, 2673, 2701, 2812, 2871, 2893, 2894, 3025, 3032, 3042, 3046, 3072, 3210, 3301, 3306, 3416, 3431, 3564, 3666, 3840, 3900, 3962, 3976.

#### Cincinnati Southern.

At a special meeting of the trustees, held January 23, the result of which, however, was not announced until several days afterwards, it was voted to award the contract for the Ohio River Bridge to the Keystone Bridge Company of Pittsburgh, at the price named in the bid, \$663,570. Two of the

bids put in were less than this, those of Thomas Leighton and the Watson Company. The Keystone Company's bid was \$70,570 more than the Watson Company's.

Mr. Thomas Hooper, one of the trustees, has resigned. It is understood that he was opposed to the policy of the majority of the trustees, and believed that the road should be completed from Lexington southward before anything was done between Lexington and Cincinnati.

#### Fitchburg.

At the annual meeting in Boston, January 26, the stockholders voted to accept the act authorizing the construction of additional tracks and the relocation of parts of the Fitchburg and Vermont & Massachusetts roads. It is not intended to lay the additional tracks at present, but the relocation will be begun at once.

#### Washington & Sparta.

Arrangements are being made to secure the building of a narrow-gauge railroad from Washington, Pa., through the valleys of Chartiers and Ten Mile creeks to Sparta, a distance of about 16 miles.

#### Savannah, Skidaway & Seaboard.

This company has applied to the Georgia Legislature for authority to take up its tracks in East and West Broad streets and a part of Bay street in Savannah, those tracks not being now in use. The company also asks to be relieved from the obligation to build and operate a street railroad through Drayton street in Savannah.

#### New York, New Haven & Hartford.

This company and the New Haven & Northampton have retired from all agreements by which freight in the cars of the various fast freight lines has been carried below the regular rates. From February 1 freight in line cars will be received and transported the same as all other freight at regular local rates. Both companies have heretofore received these line cars from the Boston & Albany with freight on which through rates had been made from Western points, and had hauled them to destination, on receiving their *pro rata* share of the through rate. Under the new arrangement through rates can only be made to Springfield, local rates being charged from that point to Hartford and New Haven. The Housatonic still continues to receive through cars from the Boston & Albany at through rates.

#### Augusta & Lewiston.

Application has been made to the Maine Legislature for a charter for a railroad from Lewiston, Me., northeast to Augusta, about 20 miles. It is to be a link in the proposed new line from Portland to Quebec by the Levis & Kennebec and Somerset roads. The project meets with much opposition from the Maine Central interest.

#### Wisconsin Valley.

This company has concluded contracts for 40 barges, eight tugs and a steamboat to carry lumber down the Mississippi, and intends to have them ready by the opening of navigation. It is said that it will then carry lumber from Grand Rapids, Wis., to St. Louis for \$50 and to St. Joseph, Archison and Leavenworth for \$83 per car-load. The steamboat is for use at the Keokuk rapids.

#### Connecticut Western.

It is stated that arrangements had recently been made by which coal and other freight was to be ferried across the Hudson at Newburg and shipped eastward over the Dutchess & Columbia, Connecticut Western and Hartford, Providence & Fishkill roads, but that the matter is blocked for the present by the refusal of President Barnum, of the Western, to accept for that road its *pro rata* share of the freight receipts, he desiring a higher rate. Much feeling has been caused by this, and it is reported that the board of directors is opposed to the President's policy and will, in all probability, over-rule him in the matter.

#### St. Joseph & Palmer.

Surveys are being made for a narrow-gauge railroad, about 30 miles long, from the St. Joseph lead mines in St. Francis County, Mo., west to the Palmer mines in Washington County. The road will cross the St. Louis, Iron Mountain & Southern at Irondale, and its object will be chiefly to carry ore to and coal from that road.

#### Rome, Watertown & Ogdensburg.

The caisson for the center pier of the bridge over the Genesee, on the Lake Ontario Division was successfully placed last week. The caisson was floated to its place, and then sunk on the piles prepared to receive it. The work on the bridge will be pushed forward as fast as weather and water will permit.

#### Pella & Knoxville.

Meetings are being held to advocate the construction of a narrow-gauge road from the Keokuk & Des Moines at Pella, Ia., southwest about 15 miles to Knoxville.

#### Portland & Rochester.

This company asks for three years' more time in which to change the location of its track between Cumberland Mills, Me., and Portland. Also for authority to lay a track from the most convenient place north of Deering's Bridge in Portland to Wilmot street or some convenient point on the Marginal Way.

#### Vermont Central.

Upon the petition of J. Gregory Smith, Joseph Clark, U. C. Smith, Benjamin P. Cheney and Lawrence Barnes, former trustees and managers of the trust property of the Vermont Central and Vermont & Canada railroads and other property, the Vermont Chancery Court has appointed John L. Edwards of Derby, Dudley C. Dennison of Royalton, and ex-Governor Paul Dillingham of Waterbury a board of special masters to examine, adjust and state to the court as soon as may be the accounts of said trustees and managers.

### ANNUAL REPORTS.

#### Philadelphia & Reading.

The last report, of which the following is a summary, covers the year ending Nov. 30, 1874.

The company owns 327 miles of railroad, consisting of a main line 98.4 miles long and ten branches, varying from 1.2 to 64.6 miles in length; 171.9 miles of the branches are single track, 155.1 double track, and the main line has 150.1 and the branches 133.5 miles of sidings and laterals, so that the 327 miles of road owned has 765.7 miles of track.

The company leases fifteen railroads, from 2.5 to 92.6 miles long, with an aggregate length of 355.4 miles, 76 of which is double track, while it has in addition 196.5 miles of sidings and laterals—in all 627 miles of track.

The company control through the ownership of a majority of their stock 42.9 miles of single-track railroad—the Reading & Columbia, 39.5 miles, and its Lebanon Branch, 3.4 miles—which have 15.3 miles of sidings and laterals.

Altogether the company works:

	Single track.	Double track.	Length of road.	Sidings & laterals.	Total track.
Roads owned.....	171.9	155.1	327.0	283.6	765.7
Roads leased.....	279.4	76.0	355.4	196.5	627.9
Roads controlled.....	42.9	....	42.9	15.3	58.2
Total.....	494.2	231.1	725.3	495.4	1,451.8

This road is worked with 405 locomotives, 7,765 eight-wheel

ed and 7,308 four-wheeled coal cars, 3,819 freight cars (1 with 16 wheels, 328 four-wheeled and the rest eight-wheeled), 220 passenger, 44 baggage and 15 mail and baggage cars, and 653 service cars. The whole car stock is reckoned equivalent to 31,606 four-wheeled cars. Per mile of road this stock is 0.558 locomotives, 20.78 coal cars, 5.26 freight cars, and 0.384 passenger train cars.

Besides the roads and rolling stock and real estate charged at \$7,408,000 in the general account, which may be regarded as necessary to the conduct of the company's carrying business, the Philadelphia & Reading owns stocks in other companies charged at \$1,432,000, steam colliers worth \$2,540,000, coal barges and canal works estimated at \$1,643,000, and, more than all, \$1,000,000 of the stock and \$30,000,000 of the bonds of the Philadelphia & Reading Coal & Iron Company, and the railroad property that it owns is but little if any more than half of its total property.

The whole property is represented by \$32,722,775 of common, and \$1,551,800 of preferred stock, and by about \$58,155,000 of bonded debt. Of the latter \$182,400 bears 5 per cent., \$23,819,670, 7 per cent., and the rest 6 per cent. interest. The amount of stock and bonds per mile is not significant in the case of this company, because so large a part of its property is not railroad. The general account is debited to a gross amount of about \$46,146,000 under the heads of "railroad," "depots," "locomotive engines and cars," and "real estate," which is at the rate of \$141,000 per mile of road owned. This charges too large a part of the real estate to the road probably, and the rolling stock alone, with which 725 miles of road are worked, amounts to \$26,705 per mile of road owned. It has, indeed, four-fifths as many locomotives, and nearly 50 per cent. more cars than the Erie, which owns nearly three times as much road.

The work done on the road for two years has been:

	1874.	1873.	Inc. or Dec.	P. c.
Coal tonnage (tons of 2,240 lbs.).....	5,182,560	5,318,889	Dec.	136,328 2.6
Merchandise tonnage (tons of 2,000 lbs.).....	3,098,831	3,331,194	Dec.	232,363 7.6
Passengers carried.....	6,964,869	6,790,088	Inc.	174,781 2.6
Coal tonnage mileage.....	485,716,746	499,433,260	Dec.	13,716,514 2.7
Merchandise tonnage mileage.....	150,054,834	161,644,430	Dec.	11,589,596 7.2
Total mileage of tons of 2,000 lbs.....	694,057,680	721,009,681	Dec.	26,952,002 3.7
Passenger mileage.....	79,265,041	81,067,143	Dec.	792,102 0.1

This work was done with a total locomotive mileage of 8,119,077 miles. The total tonnage mileage is at the rate of 95,692 tons per mile of road.

On the main line 98.4 miles of road, the mileage reduced to tons of 2,000 lbs. was 424,589,162 tons of coal and 112,593,853 tons of merchandise, or 537,183,015 tons in all, which is at the rate of 5,459,177 tons per mile of road—the heaviest traffic we have ever seen reported except on the same road. The coal tonnage alone is at the rate of 4,314,930 tons per mile, and this is all in one direction. If it all went through, it would give a traffic of 13,830 short tons every working day in the year down the road—equivalent to 1,383 ordinary 8-wheel car-loads.

The earnings from this traffic were:

	1874.	1873.	Inc. or Dec.	P. c.
Passenger.....	\$2,012,266	\$1,976,645	Inc.	\$36,021 1.8
Merchandise.....	3,380,301	3,693,177	Dec.	222,876 6.2
Coal.....	8,920,914	9,104,005	Dec.	183,181 2.0
Mail.....	32,666	60,908	Dec.	8,247 25.3
Miscellaneous.....	65,514	87,841	Dec.	2,267 2.6
Gross receipts.....	\$14,462,121	\$14,832,661	Dec.	\$380,540 2.6
Working expenses.....	8,731,916	9,474,895	Dec.	742,979 7.8
Net earnings.....	\$5,730,205	\$5,357,766	Inc.	\$372,439 6.8

The working expenses were 60.4 per cent. of the receipts in 1874 against 63.9 per cent. in 1873.

The decrease in receipts is in no branch quite so great as the decrease in traffic, which latter is, reckoning a passenger mile equal to a ton-mile, about 3½ per cent., while the decrease in receipts is but 2.6 per cent. The decrease in expenses is so much greater that the net earnings show an increase of 6.8 per cent., the amount of increase being equivalent to a little more than 1 per cent. on the whole amount of capital stock.

The receipts and expenses per passenger and per ton, including in expenses renewal fund, rents, taxes, interest, etc. (the passenger receipts and expenses being calculated for the number of through trips over the main line which would have made the total passenger mileage), were as follows, on all the company's lines:

	1874.		1873.	
	Cost.	Receipt.	Cost.	Receipt.
Per passenger.....	\$2.144	\$2.361	\$1.996	\$2.506
Per ton of freight.....	.895	1.091	.763	1.082
Per ton of coal.....	.1323	1.721	1.361	1.891

This shows the company to have made a profit of 32½ cents on the transportation of every ton of coal shipped on its lines in 1874, against 29.4 cents in 1873, and if the stockholders had gone entirely without dividends, the price of coal where the company delivers it might have been reduced by these amounts on the average. The profit on coal to the shareholders on the main line last year was a little less than 40 cents per ton. This does not represent the whole income on the investment of the road, but only the shareholder's part after paying the bondholders their interest and the other fixed charges.

The income account shows:

Net receipts of road.....	\$5,791,015 15
Income from investments in other companies, less losses on canals, etc.....	1,280,869 50
Total income.....	\$7,071,874 65
Interest charges.....	\$2,723,475
Sinking funds.....	403,027
	3,126,502 00

Surplus.....	\$3,945,372 65
Balance from 1873.....	695,000 14

Dividend fund for 1874..... \$4,638,372 79

There were four 2½ per cent. dividends declared during the year..... \$3,427,407 52

On which the State tax was..... 275,194 08

Leaving a balance to the reserved fund of..... 936,771 19

which is equal to 2.73 per cent. on the company's capital stock, or more than enough to pay the next quarterly dividend.

The following are extracts from the report of the President, Mr. Franklin B. Gowen:

#### THE TRAFFIC AS AFFECTED BY THE INDUSTRIAL DEPRESSION.

"The past year has been marked by a very great depression of all manufacturing industries, and especially of the iron trade, upon the success of which the coal traffic is so dependent. This depression has been much greater than was generally expected, even after the financial panic of 1873 had shown the insecurity of the stimulated demand for the many new railroads that for two or three years had absorbed the product of existing iron works.

"It might reasonably have been expected that during a period of such stagnation the traffic of the company would have fallen off very greatly; and yet, notwithstanding the very gen-



eral suspension of manufactures, the gross receipts of the company are larger than those of any other year except the last, while the net profits are greater than those of any previous year without exception."

#### DEMAND FOR ANTHRACITE.

The annual increase of the demand for anthracite coal for domestic uses has been so great as almost to make up for the loss of tonnage resulting from a decreased demand for manufacturing purposes; and nothing can so surely show the permanence and security of this demand for domestic uses as the fact exhibited by the statistics of the past year, viz., that during a period of unexampled depression, when nearly half of the furnaces and rolling mills were out of blast, and a large proportion of other steam-power mills and factories either idle or working upon short time, the coal tonnage of the company has fallen but three per cent. below that of the largest amount ever transported.

#### UNPROFITABLENESS OF THROUGH FREIGHT FROM THE WEST.

Of the falling off of merchandise receipts, amounting to \$222,876 as compared with last year, \$184,692 is accounted for by the withdrawal of the cattle trade of the Pennsylvania Railroad Company, which was formerly transported to New York via Harrisburg, Reading and Allentown, but which, since January 26 last, has been taken from the lines of this company. The withdrawal of this traffic has resulted in a gain rather than a loss of net profits, as the receipts from it have averaged during the previous four years only eighty-five one-hundredths of a cent per ton per mile—a rate entirely insufficient to yield any profit upon its transportation. The loss of this through Western cattle trade has therefore been accompanied by such a saving of expenses as makes the net profit upon merchandise traffic greater than it would have been had this trade been retained at the customary rates heretofore paid for it. In view of the ruinously low rates at which through Western trade has been carried, it is difficult to understand upon what ground the inhabitants of Western States base their complaints of exorbitant charges against railroad companies and their demand for new east-and-west freight lines, as all experience seems to show that local producers and consumers along the lines of Eastern railways have been charged unnecessarily high rates in order to enable existing railroad companies to carry the Western traffic, not only at less than its cost, but at one-half the rates at which it could be transported by any new freight railroad depending exclusively upon through trade.

#### ABOLITION OF FREE PASSES.

It is believed that the increased receipts from passenger traffic are in a great measure due to the abolition of the free-pass system; and the Managers take great pleasure in informing the stockholders that during the year not a single free pass was issued to any one, except to an employee of the company, and to the few persons who were entitled to free travel by existing contracts in consideration for surrender of real estate, or as directors of leased lines; and in case of the latter exception the pass was confined to the line leased, in strict accordance with the terms of the contract under which it was issued. The abolition of this most pernicious system has not only added to the revenues of the company, and greatly relieved the executive officers from the thousands of annoying and pertinacious demands heretofore made upon them, but it is believed that it has given entire satisfaction to the general traveling public. So long as certain favored individuals were allowed to travel for nothing, each person buying a ticket felt the injustice of the discrimination which compelled him to pay for what less deserving people obtained as a gift; but where an inflexible rule is applied to all, without fear, favor, or affection, it is followed by an immediate and cheerful acquiescence.

#### FLUCTUATIONS IN TRAFFIC.

A reference to the table exhibiting the monthly receipts will show how irregular and fitful the business for the year has been. Up to the 1st of July the profits for the year were \$529,000 in excess of those of the same period of 1873; but in the months of July and August the absence of demand for coal involved the necessity of repeated suspensions of mining, and the net profits for those two months fell off so much that more than the previous gain was lost. A sufficient recovery was made, however, during the autumn to close the year's business with an increase of net profits amounting to \$362,440 over those of the previous year. Had the traffic kept up its usual amount in July and August, this increase of net profits would have been from \$1,000,000 to \$1,500,000.

#### CAPACITY OF ROAD.

Some estimate of the present capacity of the railroad and equipment may be formed from the fact that in the month of October alone, 902,985 tons of coal were transported, equal to a weekly tonnage of over 200,000 tons, and that during one day of the same month 48,282 tons were carried. The efficiency of the plant and the character and morale of the staff of officers and employees are attested by the gratifying fact that this large amount of traffic was transported without serious accident or detention, and that during the year 6,664,869 passengers were carried over the lines without injury to any, resulting from fault or negligence of the company or its employees.

#### THE STEAM COLLIERIES.

During the year the two new iron steam colliers built at Chester, and five of the six built at Philadelphia (to which reference was made in the last report), have been finished and placed in the trade. The following table shows the result of the year's business as compared with that of previous seasons:

	Tons of coal carried.	Total receipts.	Total expenses.	Net profits.	Av. rate freight received per ton.
1873.....	127,276	\$355,460 03	\$237,818 26	\$117,641 77	\$2 62
1874.....	135,073	309,296 33	202,111 04	107,185 29	2 32
1874.....	217,340	300,636 26	294,045 41	6,590 85	1 29

The small amount of net profits is due, first, to the expenses attending the receipt and introduction of seven new ships; and second, and principally, to the low rate of freight prevailing during the year. In consequence of the dullness of trade, vessels have been in such plentiful supply during the season that freights from Philadelphia to eastward ports have fallen, in the average, at least a dollar below the usual rates heretofore paid, and the steamers had to submit to the same reduction as sailing vessels. Had the rates kept up to the standard of 1873, the line would have shown a handsome profit. It must be borne in mind, however, that low rates of freight from Philadelphia to New England are of much more value to the company than profits upon its steam colliers, which carry but about one-tenth of the coal shipments of the company, and that the increased car service and decreased cost of shipping coal at Port Richmond, due to the certainty and regularity of the supply of steam colliers, already amounts to a very handsome interest upon the cost of the fleet. Included in the expenses of 1874 is the sum of \$43,033.05, charged to insurance fund of steam colliers, which is now in credit \$78,900.67.

#### THE COMPANY'S EXPRESS BUSINESS.

The express business has realized a net profit of \$54,540.81, against \$41,915.60 for the previous year. The equipment account of \$37,408.68 has not been increased, as all new equipment required during the year for the increasing business has been charged to expense account.

Although the sum realized as profit is so much larger than that received last year, and so much greater than was ever de-

rived from the Adams Express Company, it is to be borne in mind that the business is still being conducted under the most unrelenting opposition of the latter company, which, during the year, has continued in business at the various stations of the company, and which has smuggled most of its valuable traffic over the roads as passengers' baggage, without paying any charges therefor; its sole effort seeming to be, at any cost to itself, to cripple and destroy the express business of the railroad company, in the hope of demonstrating that railroad companies can only transact a profitable express business through the medium of that company, which already enjoys the monopoly of it upon most of the railway lines in the United States. If, under such adverse circumstances, a result so favorable has been obtained, there can be no exaggeration in saying that the express and parcel business of the company is worth at least 100 per cent. more than the sum formerly paid for the privilege of making use of the agents of the railroad company to transfer the profits belonging to their employer to the treasury of the Adams Express Company.

#### THE COMPANY'S COAL AND MINING INTERESTS.

"The purchase of coal lands made during the year by the Philadelphia & Reading Coal and Iron Company, added to those previously acquired, will make an aggregate of 100,000 acres. At present it is not designed to purchase any more, except such few small tracts of intervening lands as may be found to be necessary additions to the present estate. At the time when the scheme of the Coal and Iron Company was first inaugurated, it was not thought necessary for the company to become owners of collieries and miners of coal, it being then believed that an acquisition of coal lands to be worked by tenants was alone sufficient for the purpose designed. An experience of one or two years as landlords showed how utterly inadequate, under existing circumstances, the individual tenants were to develop and improve the estate. But few private persons had sufficient capital to open and conduct a colliery in any other manner than to make it profitable during a few years, after which it was thrown upon the hands of the landlords, who were forced to expend large sums upon it in order to protect it from destruction. Added to this, the depressed condition of the coal trade, resulting from the repeated strikes of 1869, 1870, and 1871, had given little encouragement to individuals to engage in mining, and those who had survived the contest with the workmen had but little capital left to improve their collieries and open new mines for the future. It seemed inevitable, therefore, that, if left to individual enterprise, the development of the coal region would be retarded for many years; and nothing remained for the company but to profit by the experience and to follow the example of the large coal and railroad companies of the Wyoming region, and to become miners of coal upon their own estates. This policy has been steadily pursued for the last two years, during which a large number of collieries, formerly worked by tenants, have been bought. New ones have been erected, and the old ones remodeled and improved. These works, which have occupied the greater part of two years, are now completed; and of the 82 collieries now in operation upon the lands of the company, 37 will be worked by the company itself, the others remaining in the hands of tenants until the expiration of their respective leases. The position occupied by the company as miners of coal, required, in addition to the very large expenditure made in purchasing, opening and improving collieries, a large investment to be made, outside of the coal regions, to enable them to handle and successfully dispose of the product of the mines. Large retail yards in the city of Philadelphia, wharves and shipping facilities in New York and the various Eastern ports, have been purchased and erected; and it is believed that no other company now possesses greater advantages than those of the Philadelphia & Reading Coal and Iron Company in the ability to mine coal economically, and to dispose of a large product to the best advantage; the only improvement yet wanted to complete the system being a depot capable of storing at one place at least 500,000 tons of coal, in order to keep the collieries constantly at work, and avoid the expense of stopping them whenever orders are scarce or vessels not in sufficient supply to carry away the products.

"Among the most important of the new works commenced by the company, has been the sinking of two perpendicular shafts or pits in the vicinity of Pottsville, in order to reach and work the large white ash coal veins of the southern basin. This work has been prosecuted vigorously until a depth of 1,128 feet was reached by the deepest shaft, from which a borehole has been sunk into the Mammoth vein at a distance of 1,954 feet from the surface of the ground. The shaft will be continued down to the Primrose vein, a depth of 1,569 feet from the surface, from which point the Seven-foot vein and the Mammoth vein will be reached by a tunnel, as shown on the cross section of the basin hereto annexed. The several veins of workable coal opened by these shafts are as follows:

Tracy vein.....	6 feet thick.
Diamond vein.....	4 "
Orchard vein.....	6 "
Primrose vein.....	12 "
Seven-foot vein.....	11½ "
Mammoth vein.....	25 "

Making a total thickness of coal of 64 feet, exclusive of the smaller veins; and in addition to these veins there are the coal strata underlying the Mammoth vein, which can be reached in the future, if required, by an extension of the shafts. The extent of territory tributary to these shafts is so great that there can be but little doubt that at least one hundred millions of tons in the several veins already opened can be worked through them, and that for almost an indefinite period the proposed colliery will be one of the most productive known. When it is considered that the deposits of coal thus opened and proved extend throughout the entire length of the southern coal-field, principally underlying lands bought at exceedingly low prices, and heretofore considered by many as comparatively valueless, and which are within one hundred miles of tide-water at Philadelphia, the importance of the developments made by the shafts cannot be overestimated.

"To supply the funds required for the various new works of the Coal and Iron Company herein above referred to, the building of new steam colliers, the double track upon the Lebanon Valley and East Pennsylvania Railroads, etc., etc., an issue of ten millions of dollars 6 per cent. gold coupon bonds was made during the year. This loan was part of a general mortgage loan of \$60,000,000, authorized by the managers, of which amount \$35,000,000 will be retained for the present consolidated and improvement mortgages, \$15,000,000 will be reserved for future wants, and the ten millions of dollars above referred to were issued by subscription in London, in July last, at 90 per cent. in gold. To secure the advances heretofore made by the railroad to the Coal and Iron Company, the latter company executed a mortgage of \$30,000,000 to the railroad company, which has been transferred and assigned to the trustees of the general mortgage, and in this manner the lands of the Coal and Iron Company are pledged for the payment of the bonds created under the new mortgage."

"The tonnage of the lands owned and controlled by the Philadelphia & Reading Coal and Iron Company for 1874 was 3,006,774, against 3,218,376 in 1873.

"The present annual capacity of the collieries upon these lands may safely be stated as follows:

	Tons.
From collieries to be worked by the company.....	3,000,000
From collieries leased to tenants.....	2,100,000
Total.....	5,100,000

And though it is not expected that manufactures will sufficiently revive during next year to require so large a product, it cannot be long before it will be absorbed by the increasing demand, and additional collieries will have to be opened to produce more coal.

"When it is considered that the anthracite coal trade of the United States has now reached an annual product of 19,000,000 of tons, that it has doubled every ten years during the past; that in ten years it will be 40,000,000 of tons; and that the Philadelphia & Reading Coal and Iron Company owns at least one-third of all the anthracite coal land of Pennsylvania—but little doubt can reasonably be entertained of the future success of the company."

"Although there have been frequent periods when the yearly tonnage has fallen below that of the preceding year, it will be observed \* \* \* that every period of contraction has been followed by a period of more than corresponding expansion. In a country as rich in mineral and agricultural resources, there can be but little doubt that the future of the coal trade will show as great an increase as the past has done, and that the falling off of tonnage during the present crisis is merely temporary, and must of necessity be followed by a largely-increased demand within the next two or three years.

"The Managers have felt it to be the part of true wisdom to prepare for this inevitable increase of trade in proper time; and though the expenditure of one half of the capital invested in permanent improvements by the Coal and Iron Company during the last two years might have been postponed to a future day, without affecting the receipts of the present year, the result of such postponement would have been most seriously felt in the inability of the company to respond to the increased demand attending a sudden revival of manufacturing industry and the sure and gradual growth of the consumption for domestic purposes. In the same manner, had it been considered safe to ignore the future and look only to the present year of depression, a very great apparent saving of expenses might have been made by the railroad company, but such a saving would have been but poor economy and must necessarily have resulted in a depreciation of plant that would have been severely felt when tested by the strain of a large traffic. Whilst, therefore, the improvements upon the estate of the Coal and Iron Company have secured for the railroad a certain traffic, which can always be relied upon as fully commensurate with the wants of the market, the roadway, rolling-stock and other plant of the railroad company have been kept up to their usual state of efficiency, and are amply sufficient upon the shortest demand, to move a traffic of 200,000 tons of coal per week throughout the entire season.

#### Wilmington, Columbia & Augusta.

This company owns a railroad from Wilmington, N. C., east by south to Columbia, S. C., 189 miles. It works under lease the Wilmington & Weldon road, from Wilmington north to Weldon, 162 miles, with a branch from Rocky Mount, N. C., to Tarboro, 19 miles, making 181 miles leased, and 370 miles worked in all.

The property owned is represented as follows:

Capital stock (\$1,587 per mile).....	\$300,000
Funded debt (\$20,106 per mile).....	3,800,000
Total (\$21,693 per mile).....	\$4,100,000

Bills payable amounted, at the close of the year, to \$934,356.66. The capital account of the Wilmington & Weldon road is as follows:

Capital stock (\$8,045 per mile).....	\$1,456,200
Funded debt (\$18,945 per mile).....	1,619,100
Total (\$16,990 per mile).....	\$3,075,300

The floating debt is \$51,575.48.

The operations of the road for the year ending September 30, 1874, were as follows:

	Earnings.	Expenses.	Net earn.	Earn. per mile.
W.L., Col. & Augusta.....	\$661,462.15	\$436,223.34	\$225,238.81	\$3,500 65.95
W.L. & Weldon.....	711,409.92	398,440.08	312,969.84	3,930 66.01
Total.....	\$1,372,872.07	\$834,663.42	\$538,208.65	\$3,710 66.80

As compared with the previous year there was a decrease of \$88,829.78, or 6.1 per cent. in earnings; a decrease of \$61,581.86, or 6.9 per cent. in expenses; a decrease of \$27,247.92, or 4.3 per cent. in net earnings.

A summary of the income account is as follows:

Net earnings.....	\$225,238 81
Net profits of working W.L. & Weldon road.....	71,642 82
Interest received.....	4,706 50
Total.....	\$301,588 13

Interest and discounts.....	\$278,573 65
Extraordinary expenses.....	65,206 00
Paid on other accounts.....	1,690 02—
Deficiency.....	\$43,881 44

There has been an increase of \$115,579.18 in debt during the year, the balance of which is accounted for by an increase of \$71,697.74 in assets during the year.

On the Wilmington, Columbia & Augusta 1,613 tons of new iron and 73,937 new ties were put in the track. On the Wilmington & Weldon 1,412 tons new iron were used, and a large quantity is needed during the current year. But little has been done on the ballasting.

The equipment with which the whole line is worked consists of 60 engines, 53 passenger train cars, 738 freight train cars, and 21 road and service cars. There has been an increase of two passenger and five freight cars.

#### Summit Branch.

This company owns the Summit Branch Railroad, which is only one-half mile long, and it works under lease the Lykens Valley road, from Millersburg, Pa., to Williamstown, 20 miles. The railroads, however, are only auxiliary to the interests of the company as a coal operator.

The capital stock at the close of the year was \$4,125,000; funded debt, \$684,000, of which \$84,000 are old bonds due July 1, 1875, the remainder being the new issue due 1904. The company holds \$241,100 of its own stock and \$657,735 Lykens Valley stock.

For the year ending November 30, 1874, the operations were as follows:

Receipts from all sources.....	\$1,092,229 87
Expenses, including \$84,987 for improvements.....	825,275 97
Net earnings.....	\$266,953 90
Balance from last year.....	259,441 43

Total.....	\$526,395 32
Dividends, \$191,584.50, sinking fund, \$26,000.....	217,584 50
Balance at close of year.....	\$308,810 82

During the year the company shipped to market and sold 223,410.5 tons of coal. The decrease in quantity, the report says, is due partly to two months and ten days of stoppage, caused by disaffection of the miners, but principally to a scanty supply of cars from the Reading Railroad Company; this latter cause will be removed as arrangements have been made to send all eastern business over the Northern Central and Pennsylvania roads.



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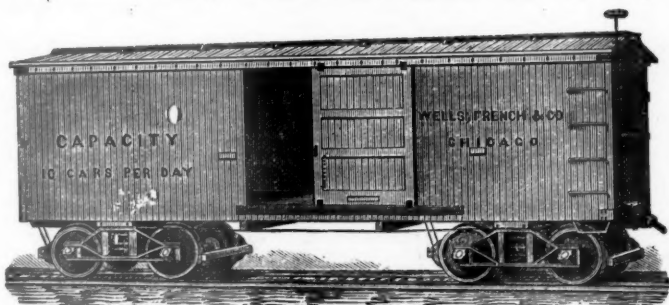
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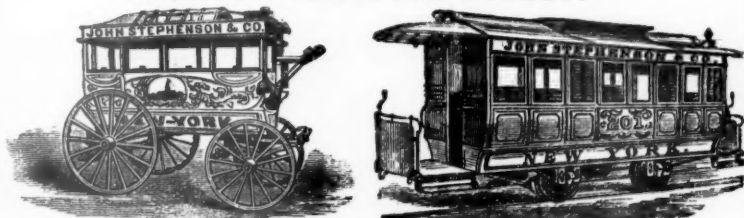
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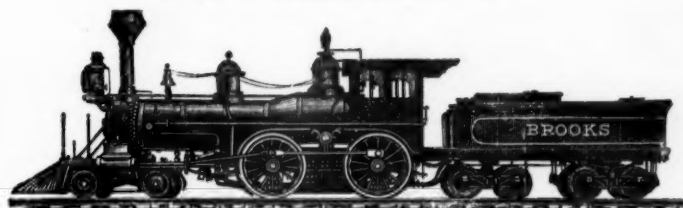
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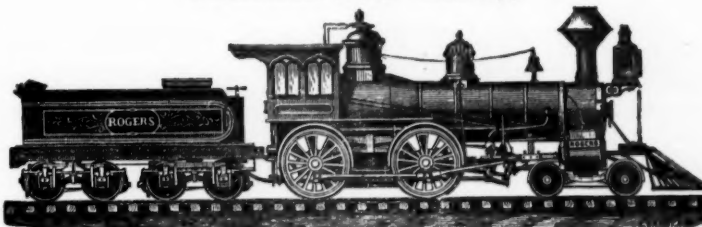


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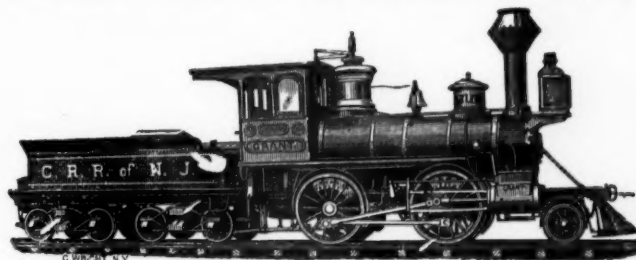


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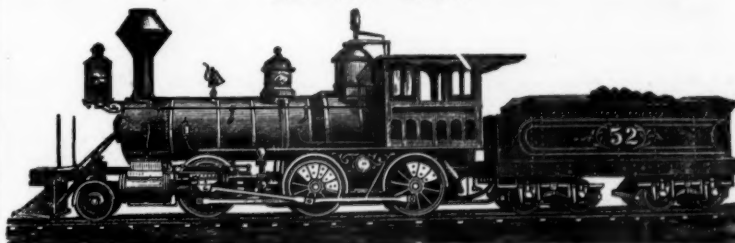
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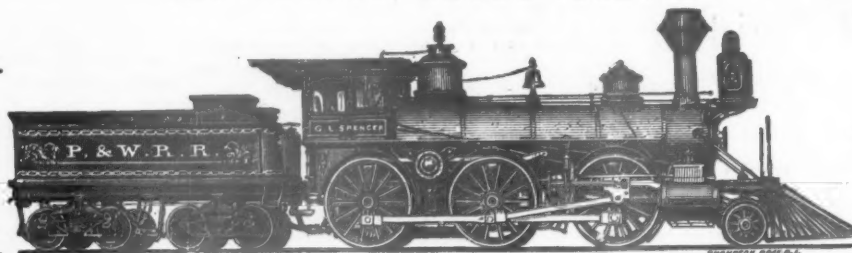
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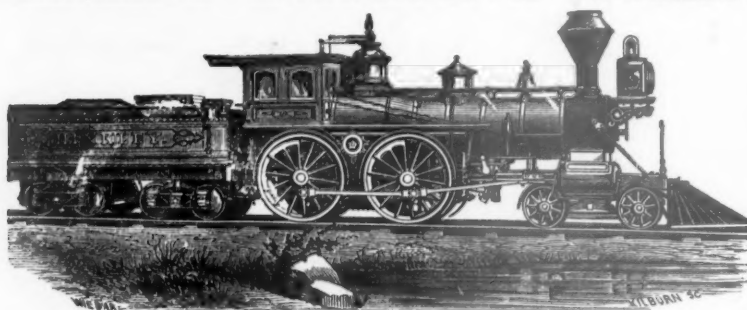
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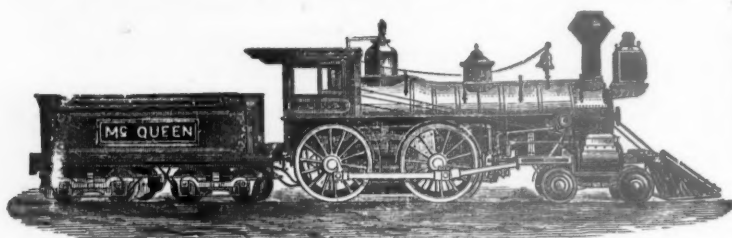
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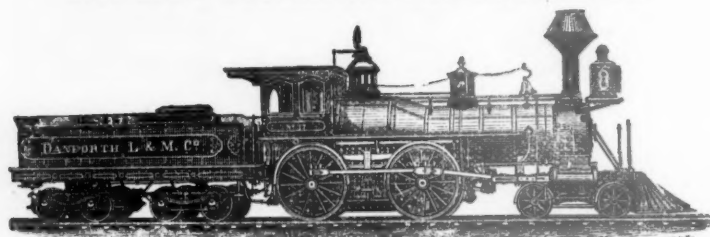
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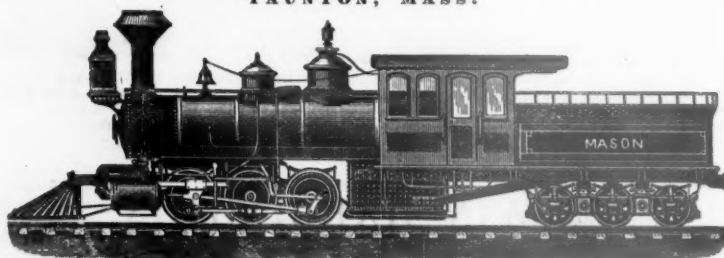
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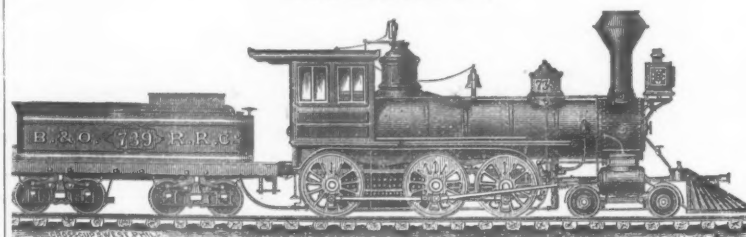
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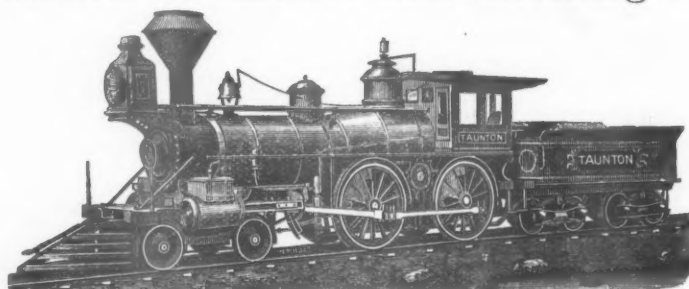
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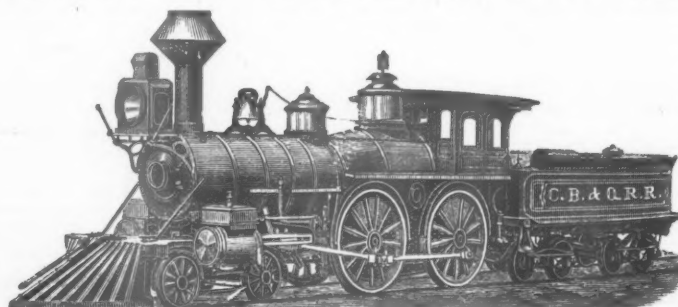
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